

TECHNICAL MEMORANDUM

Date: March 29, 2018
To: The Chemours Company FC, LLC
From: Tracy Ovbey
Subject: Former Outfall Sampling Investigation
Fayetteville Works Facility
Fayetteville, North Carolina

INTRODUCTION

Parsons has prepared this *Former Outfall Sampling Investigation* technical memorandum on behalf of the Chemours Fayetteville Works facility (Site) located in Fayetteville, North Carolina (Figure 1). The former outfall channel was used to convey process water/plant water to the former National Pollutant Discharge Elimination System (NPDES) outfall and now operates as a conveyance of stormwater to the Cape Fear River. There is no active wastewater discharge from the Site into this former outfall channel. It appears that the former outfall channel (which was present as an unlined natural erosional channel off the bluff where the manufacturing area exists) continued to erode into the underlying land over the life of its operation to the point where it now intercepts groundwater from the Surficial and Black Creek Aquifers. Based on recent monitoring, water volumes approximately double during moderate rainfall events.

Sampling of the former outfall channel was conducted on February 14, 2018 and included the collection of ten surface water samples from the baseflow in the channel and intercepting seeps and creeks. Samples collected during this investigation were analyzed for the target compound hexafluoropropylene oxide dimer acid (HFPO-DA; CAS number 13252-13-6).

The objectives of this sampling investigation were as follows:

- Investigate the physical condition and collect photographs of the former outfall channel
- Determine where groundwater or other surface water may be entering the former outfall channel
- Determine the current concentrations of HFPO-DA in the former outfall channel surface water

SAMPLING AND ANALYTICAL METHODOLOGY

Samples were collected from four locations along the former outfall channel that were pre-selected by Chemours and Parsons. Once in the field, additional samples were also collected based on the presence of seeps and creeks that were observed to be intersecting the channel. The five outfall channel, three creek, one seep, and one waterbody sample locations are shown on Figure 2. Information related to each sample location was recorded in a field notebook and photographs were collected (see Attachment 1).

Collection, Preservation and Handling of Samples

Sample bottles were filled directly from the surface water location. Each sample bottle was labeled and placed in an insulated sample cooler immediately after being collected. The cooler served as a shipping container and was provided by the laboratory along with the appropriate sample containers. Wet ice was placed in the shipping containers within heavy-duty plastic bags. Samples were maintained at a cool temperature (optimum 4°C ± 2°C) from the time of collection until the coolers arrived at the laboratory.

Prior to shipment of the samples to the laboratory, a chain-of-custody form was completed by the field sample custodian. Sample locations, sample identification numbers, description of samples, number of samples collected, and specific laboratory analyses to be run on each sample were recorded on the chain-of-custody form.

Quality Control Checks

Associated quality control samples collected and analyzed for the project included field duplicates and matrix spikes and lab replicates collected at a frequency of one per 20 samples, and field blanks, collected at a frequency of one per day of sampling.

Laboratory Analysis

Samples were submitted to TestAmerica-Denver, Arvada, Colorado for analysis of HFPO-DA using method DV-LC-0012, Revision 14. The laboratory reported the HFPO-DA results to a reporting limit (RL) which was based on the low concentration or concentration equivalent calibration standard. Reported concentrations were not corrected for contaminants detected in associated method and field blanks. Deliverables included a narrative and appropriate laboratory raw data and QC summary forms. The laboratory analytical data is included as Attachment 2.

RESULTS

The Former Outfall Sampling Investigation included the collection of surface water samples at ten locations (Figure 2). Additionally, a field blank was collected for quality assurance purposes. HFPO-DA concentrations ranged from 1,300 to 13,000 nanograms per liter (ng/L). The highest concentrations of HFPO-DA were detected near the north end (head waters) of the former outfall channel at sample locations D and E (13,000 ng/L and 11,000 ng/L respectively). The lowest HFPO-DA concentrations were detected at the Waterbody and A Seep locations (1,800 ng/L and 1,300 ng/L respectively).

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FIGURES

- Figure 1: Site Location Map
- Figure 2: Surface Water Sample Locations

TABLE

- Table 1: Former Outfall Sampling Results

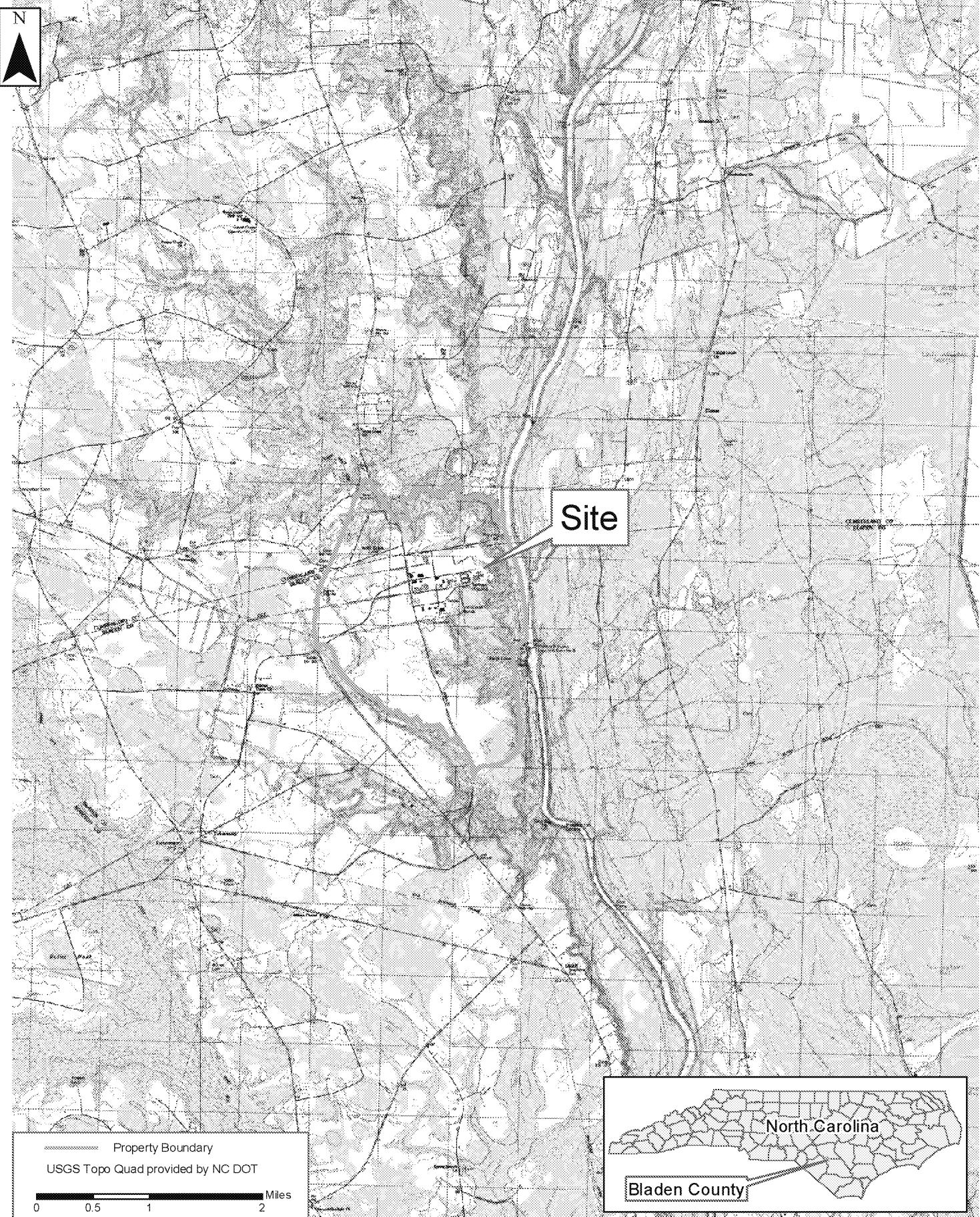
ATTACHMENTS

- Attachment 1: Sample Location Photographs
- Attachment 2: Laboratory Analytical Results

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FIGURES



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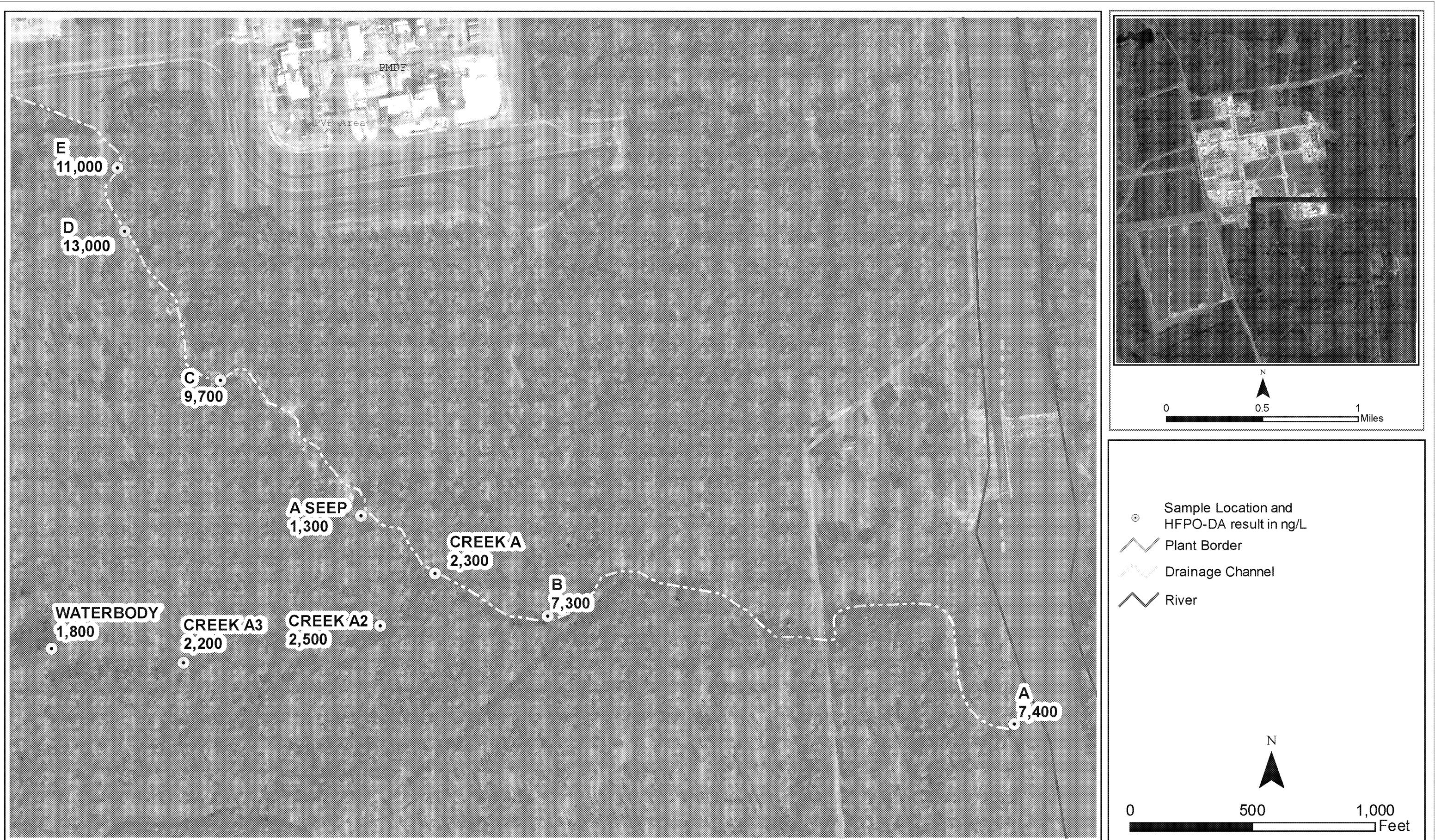
PE&I
4701 Hedgemore Dr.
Charlotte, NC 28209

Site Location Map
Former Outfall Sampling Investigation
Chemours Fayetteville Works
Fayetteville, North Carolina

Drawn: C. Oneal Date: 1/29/2018 File Project Number: 450768

Revision: 1 Figure Number: 1

Name: Fay_Fig_1_Site_Loc



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TABLE

Table 1
Former Outfall Sampling Results
Former Outfall Sampling Investigation
Chemours Fayetteville Works
Fayetteville, North Carolina

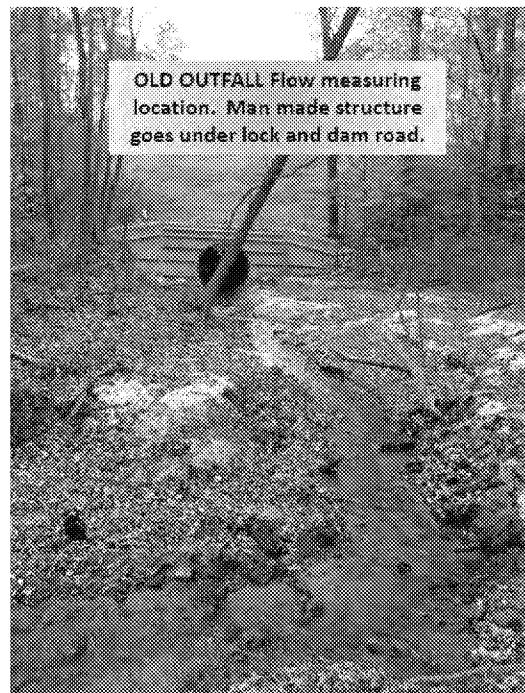
Sample ID	Location ID	Sample Date	Report Result (ng/L)
OLDOUTFALL-A	A	02/14/2018	7400
OLDOUTFALL-B	B	02/14/2018	7300
OLDOUTFALL-C	C	02/14/2018	9700
OLDOUTFALL-D	D	02/14/2018	13000
OLDOUTFALL-E	E	02/14/2018	11000
OLDOUTFALLCREEK-A	CREEK A	02/14/2018	2300
OLDOUTFALLCREEK-A2	CREEK A2	02/14/2018	2500
OLDOUTFALLCREEK-A3	CREEK A3	02/14/2018	2200
OLDOUTFALLCREEKWATERBO	WATERBODY	02/14/2018	1800
OLDOUTFALLSEEP-A	A SEEP	02/14/2018	1300

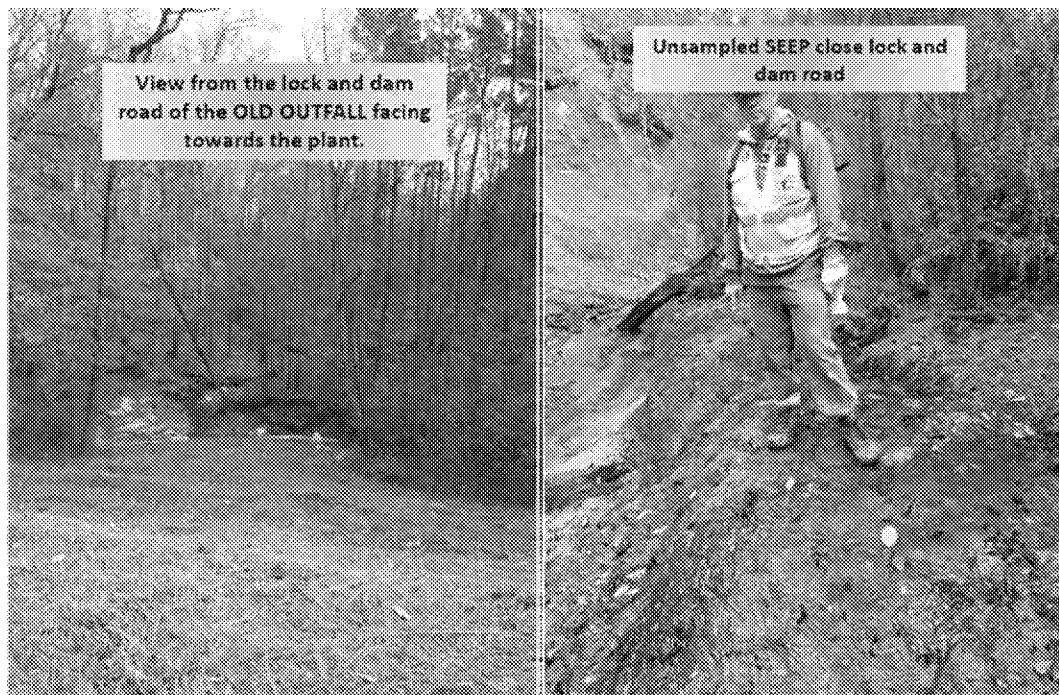
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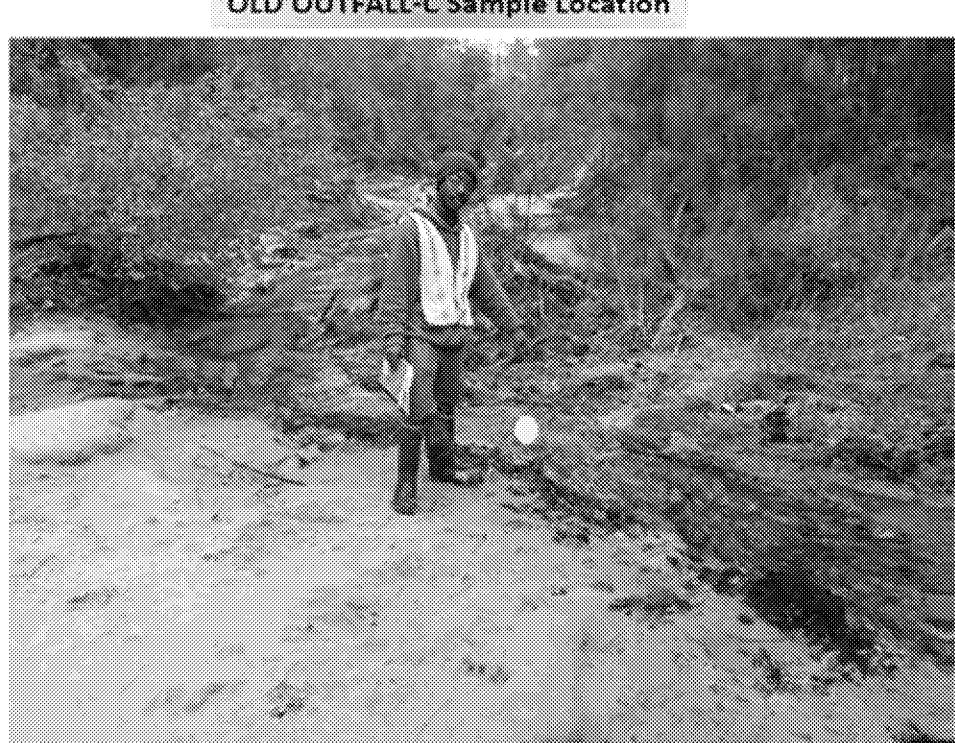
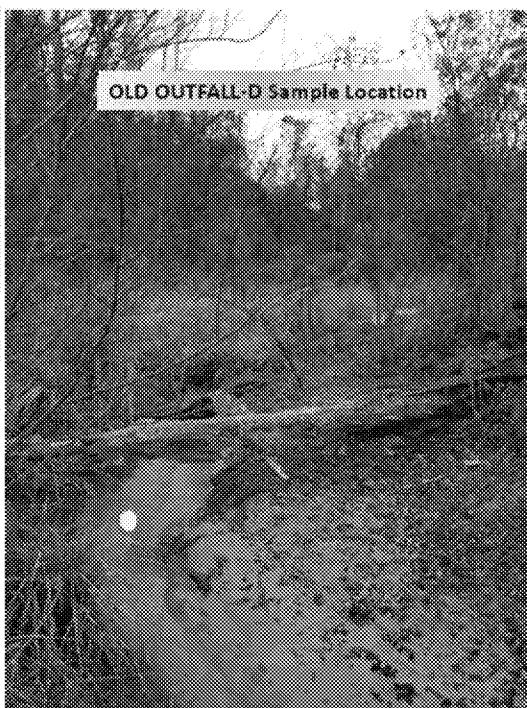
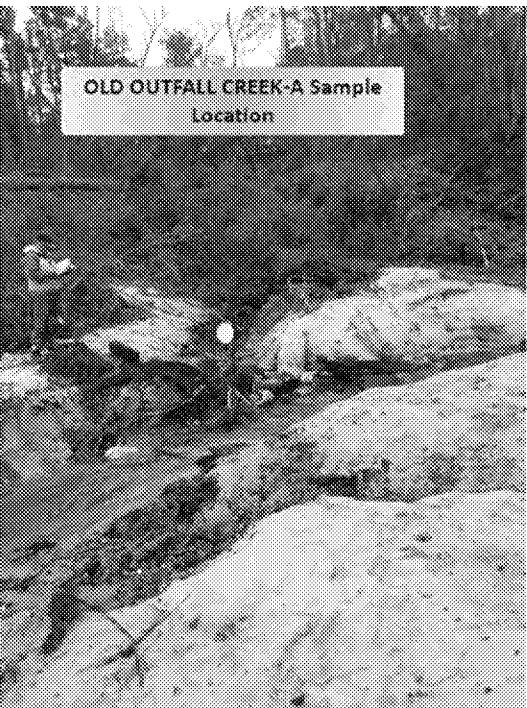
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ATTACHMENT 1

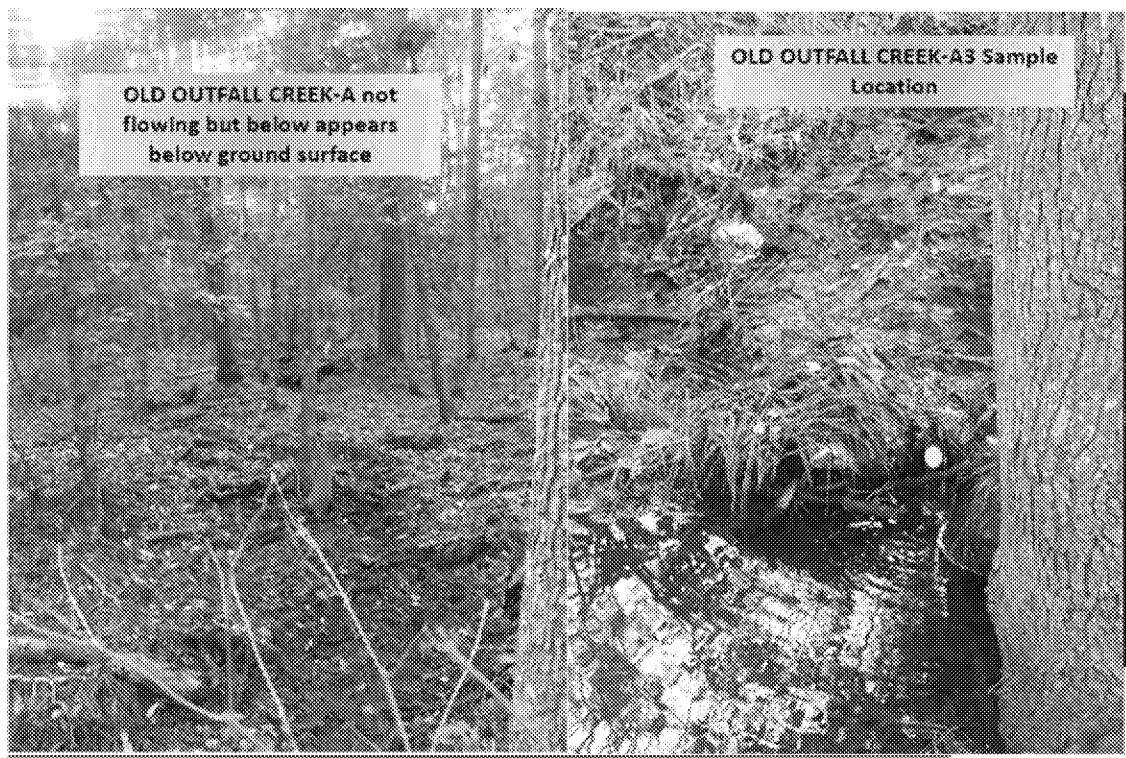
ATTACHMENT 1











WATER BODY SAMPLE LOCATION AT
THE HEAD OF OLD OUTFALL CREEK-A



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ATTACHMENT 2

**ADQM DATA REVIEW
NARRATIVE**

Site Chemours FAY – Fayetteville

Project Old Outfall Sampling 2-18

Project Reviewer Michael Aucoin

Sampling Dates February 14, 2018

Analytical Protocol

<u>Laboratory</u>	<u>Analytical Method</u>	<u>Parameter(s)</u>
TestAmerica - Denver	8321A	HFPO-DA

Sample Receipt

The following items are noted for this data set:

- All samples were received in satisfactory condition and within EPA temperature guidelines on February 15, 2018.

Data Review

The electronic data submitted for this project was reviewed via the Data Verification Module (DVM) process.

Overall the data is acceptable for use without qualification.

Attachments

The DVM Narrative report and lab report are attached.

Data Verification Module (DVM)

The DVM is an internal review process used by the ADQM group to assist with the determination of data usability. The electronic data deliverables received from the laboratory are loaded into the Locus EIM™ database and processed through a series of data quality checks, which are a combination of software (Locus EIM™ database Data Verification Module (DVM)) and manual reviewer evaluations. The data is evaluated against the following data usability checks:

- Field and laboratory blank contamination
- US EPA hold time criteria
- Missing Quality Control (QC) samples
- Matrix spike(MS)/matrix spike duplicate (MSD) recoveries and the relative percent differences (RPDs) between these spikes
- Laboratory control sample(LCS)/control sample duplicate (LCSD) recoveries and the RPD between these spikes
- Surrogate spike recoveries for organic analyses
- RPD between field duplicate sample pairs
- RPD between laboratory replicates for inorganic analyses
- Difference / percent difference between total and dissolved sample pairs.

There are two qualifier fields in EIM:

Lab Qualifier is the qualifier assigned by the lab and may not reflect the usability of the data. This qualifier may have many different meanings and can vary between labs and over time within the same lab. Please refer to the laboratory report for a description of the lab qualifiers. As they are lab descriptors they are not to be used when evaluating the data.

Validation Qualifier is the 3rd party formal validation qualifier if this was performed. Otherwise this field contains the qualifier resulting from the ADQM DVM review process. This qualifier assesses the usability of the data and may not equal the lab qualifier. The DVM applies the following data evaluation qualifiers to analysis results, as warranted:

Qualifier	Definition
B	Not detected substantially above the level reported in the laboratory or field blanks.
R	Unusable result. Analyte may or may not be present in the sample.
J	Analyte present. Reported value may not be accurate or precise.
UJ	Not detected. Reporting limit may not be accurate or precise.

The **Validation Status Code** field is set to “DVM” if the ADQM DVM process has been performed. If the DVM has not been run, the field will be blank.

If the DVM has been run (**Validation Status Code** equals “DVM”), use the **Validation Qualifier**.

DVM Narrative Report

The DVM process was executed, but no data qualifiers were applied for this project.

ANALYTICAL REPORT

Job Number: 280-106447-1

Job Description: FAY-OLD OUTFALL SAMP 2/18

For:

Chemours Company FC, LLC
c/o AECOM
Sabre Building, Suite 300
4051 Ogletown Road
Newark, DE 19713

Attention: Michael Aucoin



Approved for release.
Michelle A Johnston
Project Manager II
2/22/2018 8:03 AM

Michelle A Johnston, Project Manager II
4955 Yarrow Street, Arvada, CO, 80002

Personal Address / Ex. 6

Personal Email / Ex. 6

02/22/2018

cc: Barbara McGraw
Kelly Rinehimer

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

TestAmerica Laboratories, Inc.

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002

Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com

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Definitions/Glossary

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Qualifiers

LCMS

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
%R	Listed under the "D" column to designate that the result is reported on a dry weight basis
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

TestAmerica Denver

CASE NARRATIVE

Client: The Chemours Company FC, LLC

Project: FAY-OLD OUTFALL SAMP 2/18

Report Number: 280-106447-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

For samples requiring analysis at a dilution, the dilution factor has been multiplied by the Method Detection Limit (MDL) for each analyte and evaluated versus the project-specific reporting limit (PSRL). If the obtained value is below the PSRL, then the PSRL is preserved as the reporting limit for the diluted result, otherwise, the obtained value becomes the reporting limit. This is done in order to maintain the PSRL to meet project requirements at the request of the client and to report the lowest possible RL for each analyte.

Receipt

The samples were received on 2/15/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7° C.

Receipt Exceptions

Per client instructions received on 2/15/2018 the job description was logged as FAY-OLD OUTFALL SAMP 2/18.

Per client request for expedited turn around time and laboratory operations approval the requested analyses were logged on a 5 business day turn around time.

No other anomalies were observed during sample receipt.

Standards

Analytical standards were prepared using the acid form of the compound Perfluoro(2-propoxypropanoic) acid (HFPO-DA).

The surrogate compound, 13C3 HFPO-DA was introduced at the extraction step and was used as an internal standard for quantitation of HFPO-DA. The concentration of the surrogate spike is 0.2ug/L in water samples or 50ug/kg in soil samples.

Sample Extraction and Analysis

The samples presented in this report were extracted for the target analyte by TestAmerica Denver's SOP DV-OP-0019, Rev. 8 and analyzed for the target analyte by TestAmerica Denver's SOP DV-LC-0012, Rev. 14, with the exceptions of the items indicated in the DuPont QAS. Sample FAY-VES-OLDOUTFALL-A (280-106447-2) was chosen to be analyzed as a duplicate and also to be spiked with the target analyte.

For water samples a 250mL aliquot of each sample is extracted using solid phase extraction technique with methanol conditioned Weak Anion Exchange cartridges. Each sample is spiked with the internal standard/surrogate, prior to extraction. After the sample is passed through the cartridge, the analytes are eluted with 2%Formic Acid, 6mLs of HPLC grade MeOH and then with 4mL of 10% ammonium hydroxide in methanol. The final volume is brought to 5mL using reagent water and the extract is analyzed by LC/MS/MS.

The target analyte is separated from other components on a high-performance liquid chromatography (HPLC) C18 column with a mobile phase mixture of water containing 0.1% ammonium acetate and methanol. The mass spectrometer detector is operated in the electrospray (ESI) negative ion mode. The instrument is calibrated at 7 concentration levels (0.2, 0.5, 1.0, 2.0, 5.0, 10 and 20ug/L). The target analyte is detected as the perfluoro(2-propoxypropanoic) acid with the parent ion of 328.8 amu. The daughter ions used for analysis by LC/MS/MS are at 284.8 amu. The ratio of the peak areas to the two ions must be $\pm 20\%$ of the ion ratios in the mid-point ICAL for qualitative identification. Sample results are quantitated using the internal standard dilution.

Tuning and Calibration

The instrument is tuned with a solution of the target analyte such that mass assignments are within ± 0.5 amu of the daughter ions. The instrument is calibrated with seven concentration levels from 0.2ug/L to 20ug/L. Linear regression ($y=ax+b$) or quadratic functions ($y=ax+cx^2+b$) are used with a correlation coefficient or coefficient of determination ≥ 0.990 .

Following initial calibration (ICAL), an initial calibration blank (ICB) is tested, which consists of methanol spiked with the surrogate. The result for the target analyte must be less than one half the reporting limit (RL) to proceed.

Next an initial calibration verification (ICV) standard is tested. This is a mid-level concentration standard from a different vendor from the ICAL standard. If a different vendor is not available then, a different lot number from the same vendor is used. The ICV must be within 80-120% of the true value.

The quantitation limit verification standard is a standard from the same source as the ICAL tested run at the RL level to determine accuracy near the detection limit. This recovery must be within 70-130%.

Continuing calibration verification (CCV) standards are tested every 10 injections and are from the same source as the ICAL and are at mid-level concentration. The recovery of the CCVs must be 70-130% or recalibration is necessary.

Method QC Samples

The Method Blank is processed reagent water spiked with internal standard and prepared with each batch of 20 samples of the same matrix. All samples in the batch are processed at the same time and with the same reagents. The method blank must be less than the LOD or associated batch samples must be re-extracted and reanalyzed.

Each batch is prepared with a low- and a mid-level concentration spike Laboratory Control Samples (LCS). The recoveries of these samples must be within 70-130% or associated batch samples must be re-extracted and reanalyzed. If the recovery is biased high and samples are non-detect, results can be reported without re-extraction.

Calculations

Sample Result Calculation

For internal standard quantitation,

$$\text{HFPO-DA Response} = \text{Area of HFPO-DA} * 13\text{C3 HFPO-DA concentration / area of } 13\text{C3 HFPO-DA}$$

$$\text{Concentration in waters, ug/L} = (\text{Cex Vt})/(\text{Vo})$$

Where:

Cex = Concentration measured in sample extract from the target analyte response (ng/mL)

Vt = Volume of total extract (mL)

Vo = Volume of water extracted (mL)

2. Percent Recovery Calculation

$$\text{Spike Recovery} = (\text{SSR}-\text{SR})/(\text{SA})x100\%$$

Where:

SSR = Spike sample result

SR = Sample result

SA = Spike added

3. Relative Percent Difference Calculation

$$\text{RPD} = (\text{SR} - \text{DR})/(1/2(\text{SR}+\text{DR}))x100$$

Where:

SR = Sample result

DR = Duplicate result

HFPO-DA Analysis Anomalies

Samples FAY-VES-OLDOUTFALL-A-D (280-106447-1), FAY-VES-OLDOUTFALL-A (280-106447-2), FAY-VES-OLDOUTFALL-B (280-106447-3), FAY-VES-OLDOUTFALL-C (280-106447-4), FAY-VES-OLDOUTFALL-D (280-106447-5), FAY-VES-OLDOUTFALL-E (280-106447-6), FAY-VES-OLDOUTFALLSEEP-A (280-106447-7), FAY-VES-OLDOUTFALLCREEK-A (280-106447-8), FAY-VES-OLDOUTFALLCREEK-A2 (280-106447-9), FAY-VES-OLDOUTFALLCREEK-A3 (280-106447-10), FAY-VES-OLDOUTFALLCREEKWATERBO (280-106447-11) and FAY-VES-FB-021418 (280-106447-12) were analyzed for Perfluorinated Hydrocarbons in accordance with DV-LC-0012. The samples were prepared on 02/20/2018 and analyzed on 02/21/2018.

Calibration 9 (STD125) has been included in the raw data, but was not used in the Initial Calibration (ICAL).

Reporting limits have been adjusted accordingly for the initial volumes extracted.

The following sample was decanted prior to preparation: FAY-VES-OLDOUTFALLSEEP-A (280-106447-7).

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to analytes present above the calibration range, samples FAY-VES-OLDOUTFALL-A-D (280-106447-1), FAY-VES-OLDOUTFALL-A (280-106447-2), FAY-VES-OLDOUTFALL-A (280-106447-2[DU]), FAY-VES-OLDOUTFALL-A (280-106447-2[MS]), FAY-VES-OLDOUTFALL-B (280-106447-3), FAY-VES-OLDOUTFALL-C (280-106447-4), FAY-VES-OLDOUTFALL-D (280-106447-5), FAY-VES-OLDOUTFALL-E (280-106447-6), FAY-VES-OLDOUTFALLCREEK-A (280-106447-8), FAY-VES-OLDOUTFALLCREEK-A2 (280-106447-9), FAY-VES-OLDOUTFALLCREEK-A3 (280-106447-10) and FAY-VES-OLDOUTFALLCREEKWATERBO (280-106447-11) had to be analyzed at dilutions. The reporting limits have been adjusted relative to the dilutions required.

The MS and Sample Duplicate associated with prep batch 280-405473 were performed on sample FAY-VES-OLDOUTFALL-A (280-106447-2). The MS spike compound recovery and surrogate recovery could not be reliably calculated for HFPO-DA and 13C3 HFPO-DA because the sample concentrations were greater than four times the spike amounts. The acceptable low-level LCS and mid-level LCS/LCSD analysis data indicated that the analytical system was operating within control; therefore, corrective action was

deemed unnecessary.

No other analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Fluorochemical Characterization of Water Samples Analytical Results

Chemours Sample Identification	TestAmerica Sample Identification	Collection Date/Time	Date Sample Received by TestAmerica	Analysis Date	HFPO-DA# (ug/L ^{**})
FAY-VES-OLDOUTFALL-A-D	280-106447-1	2/14/2018 12:00	2/15/2018	2/21/2018	7.1
FAY-VES-OLDOUTFALL-A	280-106447-2	2/14/2018 12:00	2/15/2018	2/21/2018	7.6
FAY-VES-OLDOUTFALL-B	280-106447-3	2/14/2018 12:45	2/15/2018	2/21/2018	7.3
FAY-VES-OLDOUTFALL-C	280-106447-4	2/14/2018 13:38	2/15/2018	2/21/2018	9.7
FAY-VES-OLDOUTFALL-D	280-106447-5	2/14/2018 14:05	2/15/2018	2/21/2018	13
FAY-VES-OLDOUTFALL-E	280-106447-6	2/14/2018 14:15	2/15/2018	2/21/2018	11
FAY-VES-OLDOUTFALLSEE P-A	280-106447-7	2/14/2018 13:10	2/15/2018	2/21/2018	1.3
FAY-VES-OLDOUTFALLCRE EK-A	280-106447-8	2/14/2018 13:22	2/15/2018	2/21/2018	2.3
FAY-VES-OLDOUTFALLCRE EK-A2	280-106447-9	2/14/2018 16:30	2/15/2018	2/21/2018	2.5
FAY-VES-OLDOUTFALLCRE EK-A3	280-106447-10	2/14/2018 16:45	2/15/2018	2/21/2018	2.2
FAY-VES-OLDOUTFALLCRE EKWATERBO	280-106447-11	2/14/2018 17:00	2/15/2018	2/21/2018	1.8
FAY-VES-FB-021418	280-106447-12	2/14/2018 7:00	2/15/2018	2/21/2018	<0.010

HFPO-DA – hexafluoropropylene oxide dimer acid, analyzed by method DV-LC-0012, Revision 14.

< = less than the stated value

** ug/L – micrograms/liter (parts per billion)

*** The MS spike compound recoveries and surrogate recoveries could not be reliably calculated because the sample concentration was greater than four times the spike amounts.

DEFINITIONS:

Reporting Limit (RL) for the procedure is approximately 0.010ug/L.

RESULTS ARE CALCULATED ACCORDING TO THE FOLLOWING CRITERIA:

For samples analyzed in duplicate:

If the sample and laboratory duplicate are greater than 5X RL, the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample or laboratory duplicate are less than 5X RL, and the absolute difference is less than RL, the average value is reported. If the absolute difference is greater than the RL, the higher value is reported.

Matrix Spike Recoveries:

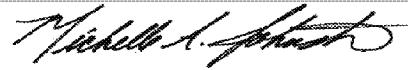
Acceptable Range: 70%-130%

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Sample ID	Matrix Spike Recoveries
280-106447-2	163%***

SUBMITTED BY:



2/22/2018

Michelle A. Johnston, Project Manager

Date

Executive Summary

Client: Chemours Company FC, LLC The

Job Number: 280-106447-1

8321A : HFPO-DA

Lab Sample ID	Client Sample ID	Analyte	Individual Result (ug/L)	Final Result (ug/L)	RL
280-106447-1	FAY-VES-OLDDOUTFALL-A-D	HFPO-DA	7.1	7.1	0.044
280-106447-2	FAY-VES-OLDDOUTFALL-A	HFPO-DA	7.4	7.6	0.043
280-106447-2 DU	FAY-VES-OLDDOUTFALL-A	HFPO-DA	7.8		0.045
280-106447-3	FAY-VES-OLDDOUTFALL-B	HFPO-DA	7.3	7.3	0.044
280-106447-4	FAY-VES-OLDDOUTFALL-C	HFPO-DA	9.7	9.7	0.047
280-106447-5	FAY-VES-OLDDOUTFALL-D	HFPO-DA	13	13	0.045
280-106447-6	FAY-VES-OLDDOUTFALL-E	HFPO-DA	11	11	0.045
280-106447-7	FAY-VES-OLDDOUTFALLSEEP-A	HFPO-DA	1.3	1.3	0.010
280-106447-8	FAY-VES-OLDDOUTFALLCREEK-A	HFPO-DA	2.3	2.3	0.010
280-106447-9	FAY-VES-OLDDOUTFALLCREEK-A2	HFPO-DA	2.5	2.5	0.010
280-106447-10	FAY-VES-OLDDOUTFALLCREEK-A3	HFPO-DA	2.2	2.2	0.010
280-106447-11	FAY-VES-OLDDOUTFALLCREEKWATERBO	HFPO-DA	1.8	1.8	0.010
280-106447-12	FAY-VES-FB-021418	HFPO-DA	<0.010	<0.010	0.010

(a) Method 8321A

(b) DUP or REP indicates a laboratory duplicate.

(c) If the sample and laboratory duplicate are both greater than 5X the RL and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher of the sample and laboratory duplicate value is reported. If the sample and/or laboratory duplicate are less than 5X the RL, and the absolute difference between the sample and laboratory duplicate is less than the RL, the average value is reported. If the absolute difference is greater than the RL, the higher of the sample and laboratory duplicate value is reported. If either the sample or the duplicate result is greater than or equal to the RL and the other is less than the RL, then the higher of the two is reported.

(d) Moisture Determined by ASTM D2216.

(e) Reporting Limit (RL) = The concentration equivalent to the low calibration standard.

Detection Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALL-A-D

Lab Sample ID: 280-106447-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPO-DA	7.1		0.044		ug/L	10		8321A	Total/NA

Client Sample ID: FAY-VES-OLDOUTFALL-A

Lab Sample ID: 280-106447-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPO-DA	7.4		0.043		ug/L	10		8321A	Total/NA

Client Sample ID: FAY-VES-OLDOUTFALL-B

Lab Sample ID: 280-106447-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPO-DA	7.3		0.044		ug/L	10		8321A	Total/NA

Client Sample ID: FAY-VES-OLDOUTFALL-C

Lab Sample ID: 280-106447-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPO-DA	9.7		0.047		ug/L	10		8321A	Total/NA

Client Sample ID: FAY-VES-OLDOUTFALL-D

Lab Sample ID: 280-106447-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPO-DA	13		0.045		ug/L	10		8321A	Total/NA

Client Sample ID: FAY-VES-OLDOUTFALL-E

Lab Sample ID: 280-106447-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPO-DA	11		0.045		ug/L	10		8321A	Total/NA

Client Sample ID: FAY-VES-OLDOUTFALLSEEP-A

Lab Sample ID: 280-106447-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPO-DA	1.3		0.010		ug/L	1		8321A	Total/NA

Client Sample ID: FAY-VES-OLDOUTFALLCREEK-A

Lab Sample ID: 280-106447-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPO-DA	2.3		0.010		ug/L	2		8321A	Total/NA

Client Sample ID: FAY-VES-OLDOUTFALLCREEK-A2

Lab Sample ID: 280-106447-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPO-DA	2.5		0.010		ug/L	2		8321A	Total/NA

Client Sample ID: FAY-VES-OLDOUTFALLCREEK-A3

Lab Sample ID: 280-106447-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPO-DA	2.2		0.010		ug/L	2		8321A	Total/NA

Client Sample ID: FAY-VES-OLDOUTFALLCREEKWATERBO

Lab Sample ID: 280-106447-11

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Detection Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALLCREEKWATERBO
(Continued)

Lab Sample ID: 280-106447-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
HFPO-DA	1.8		0.010		ug/L	2		8321A	Total/NA

Client Sample ID: FAY-VES-FB-021418

Lab Sample ID: 280-106447-12

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALL-A-D

Lab Sample ID: 280-106447-1

Date Collected: 02/14/18 12:00

Matrix: Water

Date Received: 02/15/18 09:30

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	7.1		0.044		ug/L		02/20/18 10:22	02/21/18 08:50	10
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>		<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	92	D		50 - 200			02/20/18 10:22	02/21/18 08:50	10

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALL-A

Lab Sample ID: 280-106447-2

Date Collected: 02/14/18 12:00

Matrix: Water

Date Received: 02/15/18 09:30

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	7.4		0.043		ug/L		02/20/18 10:22	02/21/18 08:54	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

13C3 HFPO-DA

89 D 50 - 200

02/20/18 10:22 02/21/18 08:54 10

TestAmerica Denver

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALL-B

Lab Sample ID: 280-106447-3

Date Collected: 02/14/18 12:45

Matrix: Water

Date Received: 02/15/18 09:30

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	7.3		0.044		ug/L		02/20/18 10:22	02/21/18 09:04	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

13C3 HFPO-DA

90 D 50 - 200

02/20/18 10:22 02/21/18 09:04 10

TestAmerica Denver

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALL-C

Lab Sample ID: 280-106447-4

Date Collected: 02/14/18 13:38

Matrix: Water

Date Received: 02/15/18 09:30

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	9.7		0.047		ug/L		02/20/18 10:22	02/21/18 09:07	10
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>		<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	86	D		50 - 200			02/20/18 10:22	02/21/18 09:07	10

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALL-D

Lab Sample ID: 280-106447-5

Date Collected: 02/14/18 14:05

Matrix: Water

Date Received: 02/15/18 09:30

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	13		0.045		ug/L		02/20/18 10:22	02/21/18 09:10	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	86	D	50 - 200				02/20/18 10:22	02/21/18 09:10	10

TestAmerica Denver

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALL-E

Lab Sample ID: 280-106447-6

Date Collected: 02/14/18 14:15

Matrix: Water

Date Received: 02/15/18 09:30

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	11		0.045		ug/L		02/20/18 10:22	02/21/18 09:13	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91	D	50 - 200				02/20/18 10:22	02/21/18 09:13	10

TestAmerica Denver

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALLSEEP-A

Lab Sample ID: 280-106447-7

Date Collected: 02/14/18 13:10

Matrix: Water

Date Received: 02/15/18 09:30

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	1.3		0.010		ug/L		02/20/18 10:22	02/21/18 08:24	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>		<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	75			50 - 200			02/20/18 10:22	02/21/18 08:24	1

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALLCREEK-A
Date Collected: 02/14/18 13:22
Date Received: 02/15/18 09:30

Lab Sample ID: 280-106447-8
Matrix: Water

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	2.3		0.010		ug/L		02/20/18 10:22	02/21/18 09:17	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	83	D	50 - 200				02/20/18 10:22	02/21/18 09:17	2

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALLCREEK-A2

Lab Sample ID: 280-106447-9

Date Collected: 02/14/18 16:30

Matrix: Water

Date Received: 02/15/18 09:30

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	2.5		0.010		ug/L		02/20/18 10:22	02/21/18 09:20	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	81	D	50 - 200				02/20/18 10:22	02/21/18 09:20	2

TestAmerica Denver

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALLCREEK-A3

Lab Sample ID: 280-106447-10

Date Collected: 02/14/18 16:45

Matrix: Water

Date Received: 02/15/18 09:30

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	2.2		0.010		ug/L		02/20/18 10:22	02/21/18 09:26	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	83	D	50 - 200				02/20/18 10:22	02/21/18 09:26	2

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALLCREEKWATERBO

Lab Sample ID: 280-106447-11

Date Collected: 02/14/18 17:00

Matrix: Water

Date Received: 02/15/18 09:30

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	1.8		0.010		ug/L		02/20/18 10:22	02/21/18 09:30	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	85	D	50 - 200				02/20/18 10:22	02/21/18 09:30	2

TestAmerica Denver

Client Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-FB-021418

Lab Sample ID: 280-106447-12

Date Collected: 02/14/18 07:00

Matrix: Water

Date Received: 02/15/18 09:30

Method: 8321A - HFPO-DA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	<0.010		0.010		ug/L		02/20/18 10:22	02/21/18 08:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	84		50 - 200				02/20/18 10:22	02/21/18 08:41	1

TestAmerica Denver

Default Detection Limits

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Method: 8321A - HFPO-DA

Prep: 3535

Analyte	RL	MDL	Units	Method
HFPO-DA	0.010	0.0051	ug/L	8321A

TestAmerica Denver

Surrogate Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Method: 8321A - HFPO-DA

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

HFPODA

(50-200)

Lab Sample ID	Client Sample ID	HFPODA (50-200)
280-106447-1	FAY-VES-OLDOUTFALL-A-D	92 D
280-106447-2	FAY-VES-OLDOUTFALL-A	89 D
280-106447-2 DU	FAY-VES-OLDOUTFALL-A	79 D
280-106447-2 MS	FAY-VES-OLDOUTFALL-A	89 D
280-106447-3	FAY-VES-OLDOUTFALL-B	90 D
280-106447-4	FAY-VES-OLDOUTFALL-C	86 D
280-106447-5	FAY-VES-OLDOUTFALL-D	86 D
280-106447-6	FAY-VES-OLDOUTFALL-E	91 D
280-106447-7	FAY-VES-OLDOUTFALLSEEP-	75
280-106447-8	FAY-VES-OLDOUTFALLCREEP	83 D
280-106447-9	FAY-VES-OLDOUTFALLCREEP	81 D
280-106447-10	FAY-VES-OLDOUTFALLCREEP	83 D
280-106447-11	FAY-VES-OLDOUTFALLCREEP	85 D
280-106447-12	FAY-VES-FB-021418	84
DLCK 280-404345/13	Lab Control Sample	104
LCS 280-405473/2-A	Lab Control Sample	81
LCSD 280-405473/4-A	Lab Control Sample Dup	79
LLCS 280-405473/3-A	Lab Control Sample	83
MB 280-405473/1-A	Method Blank	77

Surrogate Legend

HFPODA = 13C3 HFPO-DA

TestAmerica Denver

QC Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Method: 8321A - HFPO-DA

Lab Sample ID: DLCK 280-404345/13

Matrix: Water

Analysis Batch: 404345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	DLCK Result	DLCK Qualifier	Unit	D	% Rec.	% Rec. Limits
HFPO-DA	0.250	<0.50		ug/L		90	70 - 130
Surrogate	DLCK %Recovery	DLCK Qualifier	Limits				
13C3 HFPO-DA	104		50 - 200				

Lab Sample ID: MB 280-405473/1-A

Matrix: Water

Analysis Batch: 405660

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 405473

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	<0.010		0.010		ug/L		02/20/18 10:22	02/21/18 07:42	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	77		50 - 200				02/20/18 10:22	02/21/18 07:42	1

Lab Sample ID: LCS 280-405473/2-A

Matrix: Water

Analysis Batch: 405660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 405473

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec.	% Rec. Limits
HFPO-DA	0.200	0.191		ug/L		95	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
13C3 HFPO-DA	81		50 - 200				

Lab Sample ID: LCSD 280-405473/4-A

Matrix: Water

Analysis Batch: 405660

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 405473

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec.	% Rec. Limits	RPD	Limit
HFPO-DA	0.200	0.197		ug/L		99	70 - 130	3	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
13C3 HFPO-DA	79		50 - 200						

Lab Sample ID: LLCS 280-405473/3-A

Matrix: Water

Analysis Batch: 405660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 405473

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	% Rec.	% Rec. Limits
HFPO-DA	0.0200	0.0193		ug/L		97	70 - 130
Surrogate	LLCS %Recovery	LLCS Qualifier	Limits				
13C3 HFPO-DA	83		50 - 200				

TestAmerica Denver

QC Sample Results

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Method: 8321A - HFPO-DA (Continued)

Lab Sample ID: 280-106447-2 MS

Matrix: Water

Analysis Batch: 405660

Client Sample ID: FAY-VES-OLDOUTFALL-A

Prep Type: Total/NA

Prep Batch: 405473

% Rec.

Analyte	Sample	Sample	Spike	MS	MS			% Rec.	
	Result	Qualifier	Added	Result	Qualifier	Unit	D	% Rec	Limits
HFPO-DA	7.4		0.180	7.71	4	ug/L	163	70 - 130	
MS MS									
Surrogate	% Recovery	Qualifier	Limits						
13C3 HFPO-DA	89	D	50 - 200						

Lab Sample ID: 280-106447-2 DU

Matrix: Water

Analysis Batch: 405660

Client Sample ID: FAY-VES-OLDOUTFALL-A

Prep Type: Total/NA

Prep Batch: 405473

RPD

Analyte	Sample	Sample	DU		Unit	D	RPD	RPD
	Result	Qualifier	Result	Qualifier				
HFPO-DA	7.4		7.77		ug/L		5	20
DU DU								
Surrogate	%Recovery	Qualifier	Limits					
13C3 HFPO-DA	79	D	50 - 200					

QC Association Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

LCMS

Analysis Batch: 404345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
DLCK 280-404345/13	Lab Control Sample	Total/NA	Water	8321A	

Prep Batch: 405473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-106447-1	FAY-VES-OLDOUTFALL-A-D	Total/NA	Water	3535	
280-106447-2	FAY-VES-OLDOUTFALL-A	Total/NA	Water	3535	
280-106447-3	FAY-VES-OLDOUTFALL-B	Total/NA	Water	3535	
280-106447-4	FAY-VES-OLDOUTFALL-C	Total/NA	Water	3535	
280-106447-5	FAY-VES-OLDOUTFALL-D	Total/NA	Water	3535	
280-106447-6	FAY-VES-OLDOUTFALL-E	Total/NA	Water	3535	
280-106447-7	FAY-VES-OLDOUTFALLSEEP-A	Total/NA	Water	3535	
280-106447-8	FAY-VES-OLDOUTFALLCREEK-A	Total/NA	Water	3535	
280-106447-9	FAY-VES-OLDOUTFALLCREEK-A2	Total/NA	Water	3535	
280-106447-10	FAY-VES-OLDOUTFALLCREEK-A3	Total/NA	Water	3535	
280-106447-11	FAY-VES-OLDOUTFALLCREEKWATERBO	Total/NA	Water	3535	
280-106447-12	FAY-VES-FB-021418	Total/NA	Water	3535	
MB 280-405473/1-A	Method Blank	Total/NA	Water	3535	
LCS 280-405473/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 280-405473/4-A	Lab Control Sample Dup	Total/NA	Water	3535	
LLCS 280-405473/3-A	Lab Control Sample	Total/NA	Water	3535	
280-106447-2 MS	FAY-VES-OLDOUTFALL-A	Total/NA	Water	3535	
280-106447-2 DU	FAY-VES-OLDOUTFALL-A	Total/NA	Water	3535	

Analysis Batch: 405660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-106447-1	FAY-VES-OLDOUTFALL-A-D	Total/NA	Water	8321A	405473
280-106447-2	FAY-VES-OLDOUTFALL-A	Total/NA	Water	8321A	405473
280-106447-3	FAY-VES-OLDOUTFALL-B	Total/NA	Water	8321A	405473
280-106447-4	FAY-VES-OLDOUTFALL-C	Total/NA	Water	8321A	405473
280-106447-5	FAY-VES-OLDOUTFALL-D	Total/NA	Water	8321A	405473
280-106447-6	FAY-VES-OLDOUTFALL-E	Total/NA	Water	8321A	405473
280-106447-7	FAY-VES-OLDOUTFALLSEEP-A	Total/NA	Water	8321A	405473
280-106447-8	FAY-VES-OLDOUTFALLCREEK-A	Total/NA	Water	8321A	405473
280-106447-9	FAY-VES-OLDOUTFALLCREEK-A2	Total/NA	Water	8321A	405473
280-106447-10	FAY-VES-OLDOUTFALLCREEK-A3	Total/NA	Water	8321A	405473
280-106447-11	FAY-VES-OLDOUTFALLCREEKWATERBO	Total/NA	Water	8321A	405473
280-106447-12	FAY-VES-FB-021418	Total/NA	Water	8321A	405473
MB 280-405473/1-A	Method Blank	Total/NA	Water	8321A	405473
LCS 280-405473/2-A	Lab Control Sample	Total/NA	Water	8321A	405473
LCSD 280-405473/4-A	Lab Control Sample Dup	Total/NA	Water	8321A	405473
LLCS 280-405473/3-A	Lab Control Sample	Total/NA	Water	8321A	405473
280-106447-2 MS	FAY-VES-OLDOUTFALL-A	Total/NA	Water	8321A	405473
280-106447-2 DU	FAY-VES-OLDOUTFALL-A	Total/NA	Water	8321A	405473

TestAmerica Denver

Lab Chronicle

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALL-A-D

Lab Sample ID: 280-106447-1

Date Collected: 02/14/18 12:00

Matrix: Water

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			288.9 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		10			405660	02/21/18 08:50	AGCM	TAL DEN

Client Sample ID: FAY-VES-OLDOUTFALL-A

Lab Sample ID: 280-106447-2

Date Collected: 02/14/18 12:00

Matrix: Water

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			295.8 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		10			405660	02/21/18 08:54	AGCM	TAL DEN

Client Sample ID: FAY-VES-OLDOUTFALL-B

Lab Sample ID: 280-106447-3

Date Collected: 02/14/18 12:45

Matrix: Water

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			292.6 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		10			405660	02/21/18 09:04	AGCM	TAL DEN

Client Sample ID: FAY-VES-OLDOUTFALL-C

Lab Sample ID: 280-106447-4

Date Collected: 02/14/18 13:38

Matrix: Water

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			270.9 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		10			405660	02/21/18 09:07	AGCM	TAL DEN

Client Sample ID: FAY-VES-OLDOUTFALL-D

Lab Sample ID: 280-106447-5

Date Collected: 02/14/18 14:05

Matrix: Water

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			283.5 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		10			405660	02/21/18 09:10	AGCM	TAL DEN

Client Sample ID: FAY-VES-OLDOUTFALL-E

Lab Sample ID: 280-106447-6

Date Collected: 02/14/18 14:15

Matrix: Water

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			281 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		10			405660	02/21/18 09:13	AGCM	TAL DEN

TestAmerica Denver

Lab Chronicle

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALLSEEP-A

Lab Sample ID: 280-106447-7

Matrix: Water

Date Collected: 02/14/18 13:10

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			287.4 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		1			405660	02/21/18 08:24	AGCM	TAL DEN

Client Sample ID: FAY-VES-OLDOUTFALLCREEK-A

Lab Sample ID: 280-106447-8

Matrix: Water

Date Collected: 02/14/18 13:22

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			293.6 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		2			405660	02/21/18 09:17	AGCM	TAL DEN

Client Sample ID: FAY-VES-OLDOUTFALLCREEK-A2

Lab Sample ID: 280-106447-9

Matrix: Water

Date Collected: 02/14/18 16:30

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			290 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		2			405660	02/21/18 09:20	AGCM	TAL DEN

Client Sample ID: FAY-VES-OLDOUTFALLCREEK-A3

Lab Sample ID: 280-106447-10

Matrix: Water

Date Collected: 02/14/18 16:45

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			294.9 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		2			405660	02/21/18 09:26	AGCM	TAL DEN

Client Sample ID: FAY-VES-OLDOUTFALLCREEKWATERBO

Lab Sample ID: 280-106447-11

Matrix: Water

Date Collected: 02/14/18 17:00

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			294.1 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		2			405660	02/21/18 09:30	AGCM	TAL DEN

Client Sample ID: FAY-VES-FB-021418

Lab Sample ID: 280-106447-12

Matrix: Water

Date Collected: 02/14/18 07:00

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			293.5 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		1			405660	02/21/18 08:41	AGCM	TAL DEN

TestAmerica Denver

Lab Chronicle

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: Method Blank

Lab Sample ID: MB 280-405473/1-A

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			250 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		1			405660	02/21/18 07:42	AGCM	TAL DEN

Client Sample ID: Lab Control Sample

Lab Sample ID: DLCK 280-404345/13

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8321A		1			404345	02/08/18 13:38	AGCM	TAL DEN

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 280-405473/2-A

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			250 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		1			405660	02/21/18 07:45	AGCM	TAL DEN

Client Sample ID: Lab Control Sample Dup

Lab Sample ID: LCSD 280-405473/4-A

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			250 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		1			405660	02/21/18 07:52	AGCM	TAL DEN

Client Sample ID: Lab Control Sample

Lab Sample ID: LLCS 280-405473/3-A

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			250 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		1			405660	02/21/18 07:49	AGCM	TAL DEN

Client Sample ID: FAY-VES-OLDOUTFALL-A

Lab Sample ID: 280-106447-2 MS

Date Collected: 02/14/18 12:00

Matrix: Water

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			278.2 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		10			405660	02/21/18 09:00	AGCM	TAL DEN

TestAmerica Denver

Lab Chronicle

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Client Sample ID: FAY-VES-OLDOUTFALL-A

Lab Sample ID: 280-106447-2 DU

Date Collected: 02/14/18 12:00

Matrix: Water

Date Received: 02/15/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			280.9 mL	5 mL	405473	02/20/18 10:22	DFB1	TAL DEN
Total/NA	Analysis	8321A		10			405660	02/21/18 08:57	AGCM	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL [Personal Address / Ex. 6]

TestAmerica Denver

Accreditation/Certification Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
North Carolina (WW/SW)	State Program	4	358	12-31-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8321A	3535	Water	HFPO-DA

TestAmerica Denver

Method Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Method	Method Description	Protocol	Laboratory
8321A	HFPO-DA	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, Personal Address / Ex. 6

TestAmerica Denver

Sample Summary

Client: Chemours Company FC, LLC The
Project/Site: FAY-OLD OUTFALL SAMP 2/18

TestAmerica Job ID: 280-106447-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-106447-1	FAY-VES-OLDDOUTFALL-A-D	Water	02/14/18 12:00	02/15/18 09:30
280-106447-2	FAY-VES-OLDDOUTFALL-A	Water	02/14/18 12:00	02/15/18 09:30
280-106447-3	FAY-VES-OLDDOUTFALL-B	Water	02/14/18 12:45	02/15/18 09:30
280-106447-4	FAY-VES-OLDDOUTFALL-C	Water	02/14/18 13:38	02/15/18 09:30
280-106447-5	FAY-VES-OLDDOUTFALL-D	Water	02/14/18 14:05	02/15/18 09:30
280-106447-6	FAY-VES-OLDDOUTFALL-E	Water	02/14/18 14:15	02/15/18 09:30
280-106447-7	FAY-VES-OLDDOUTFALLSEEP-A	Water	02/14/18 13:10	02/15/18 09:30
280-106447-8	FAY-VES-OLDDOUTFALLCREEK-A	Water	02/14/18 13:22	02/15/18 09:30
280-106447-9	FAY-VES-OLDDOUTFALLCREEK-A2	Water	02/14/18 16:30	02/15/18 09:30
280-106447-10	FAY-VES-OLDDOUTFALLCREEK-A3	Water	02/14/18 16:45	02/15/18 09:30
280-106447-11	FAY-VES-OLDDOUTFALLCREEKWATERBO	Water	02/14/18 17:00	02/15/18 09:30
280-106447-12	FAY-VES-FB-021418	Water	02/14/18 07:00	02/15/18 09:30

TestAmerica Denver

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Instrument ID: LC_LCMS7

Analysis Batch Number: 404345

Lab Sample ID: STD001 280-404345/3 IC

Client Sample ID: _____

Date Analyzed: 02/08/18 13:05

Lab File ID: hfpo718B08034.d GC Column: Synergi Hydro ID: _____

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.06	Assign Peak	meyera	02/08/18 15:19

Lab Sample ID: STD002 280-404345/4 IC

Client Sample ID: _____

Date Analyzed: 02/08/18 13:08

Lab File ID: hfpo718B08035.d GC Column: Synergi Hydro ID: _____

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.06	Baseline	meyera	02/08/18 15:19

Lab Sample ID: DLCK 280-404345/13

Client Sample ID: _____

Date Analyzed: 02/08/18 13:38

Lab File ID: hfpo718B08044.d GC Column: Synergi Hydro ID: _____

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HFPO-DA	1.06	Baseline	meyera	02/08/18 15:20

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HFPO I.S._00008	12/12/18	01/30/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00008	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
.13C3 HFPO-DA_00008	01/30/19	Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL	
HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00004	1 mL	HFPO-DA	0.5 ug/mL
							HFPO-DA	50 ug/mL
HFPO_CAL-0_00032	02/22/18	02/08/18	PFC Dill_Solvent, Lot 00016	1 mL	HFPO I.S._00008	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	
.HFPO I.S._00008	12/12/18	01/30/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00008	1 mL	13C3 HFPO-DA	0.5 ug/mL
.13C3 HFPO-DA_00008	01/30/19	Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL	
HFPO_CAL-1_00032	02/22/18	02/08/18	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00008	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
.HFPO I.S._00008	12/12/18	01/30/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00008	1 mL	HFPO-DA	0.25 ug/L
.13C3 HFPO-DA_00008	01/30/19	Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		13C3 HFPO-DA	0.5 ug/mL	
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00004	1 mL	13C3 HFPO-DA (IS)	0.5 ug/mL
.HFPO-DA_00004	07/13/20	Wellington Laboratories, Lot HFPOADA0717		(Purchased Reagent)		HFPO-DA	50 ug/mL	
HFPO_CAL-2_00033	02/22/18	02/08/18	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00008	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
.HFPO I.S._00008	12/12/18	01/30/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO Spike_00004	1 uL	HFPO-DA	0.5 ug/L
.13C3 HFPO-DA_00008	01/30/19	Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		13C3 HFPO-DA	0.5 ug/mL	
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00008	1 mL	13C3 HFPO-DA (IS)	0.5 ug/mL
.HFPO-DA_00004	07/13/20	Wellington Laboratories, Lot HFPOADA0717		(Purchased Reagent)		HFPO-DA	50 ug/mL	
HFPO_CAL-3_00032	02/22/18	02/08/18	80:20 Methanol : H2O, Lot 00016	1 mL	HFPO I.S._00008	20 uL	13C3 HFPO-DA	10 ug/L
							13C3 HFPO-DA (IS)	10 ug/L
.HFPO I.S._00008	12/12/18	01/30/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO Spike_00004	2 uL	HFPO-DA	1 ug/L
.13C3 HFPO-DA_00008	01/30/19	Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		13C3 HFPO-DA	0.5 ug/mL	
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00008	1 mL	13C3 HFPO-DA (IS)	0.5 ug/mL
.HFPO-DA_00004	07/13/20	Wellington Laboratories, Lot HFPOADA0717		(Purchased Reagent)		HFPO-DA	50 ug/mL	

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..13C3 HFPO-DA_00008	01/30/19	Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL	
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00004	1 mL	13C3 HFPO-DA (IS)	50 ug/mL
..HFPO-DA_00004	07/13/20	Wellington Laboratories, Lot HFPOADA0717		(Purchased Reagent)		HFPO-DA	0.5 ug/mL	
HFPO_CAL-4_00032	02/22/18	02/08/18	80:20 Methanol : H ₂ O, Lot 00016	1 mL	HFPO I.S._00008	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO Spike_00004	4 uL	13C3 HFPO-DA (IS)	10 ug/L
.HFPO I.S._00008	12/12/18	01/30/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00008	1 mL	HFPO-DA	2 ug/L
					13C3 HFPO-DA	0.5 ug/mL	13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00008	01/30/19	Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL	
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00004	1 mL	13C3 HFPO-DA (IS)	50 ug/mL
..HFPO-DA_00004	07/13/20	Wellington Laboratories, Lot HFPOADA0717		(Purchased Reagent)		HFPO-DA	0.5 ug/mL	
HFPO_CAL-5_00080	02/22/18	02/08/18	80:20 Methanol : H ₂ O, Lot 00016	1 mL	HFPO I.S._00008	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO Spike_00004	10 uL	13C3 HFPO-DA (IS)	10 ug/L
.HFPO I.S._00008	12/12/18	01/30/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00008	1 mL	HFPO-DA	5 ug/L
					13C3 HFPO-DA	0.5 ug/mL	13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00008	01/30/19	Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL	
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00004	1 mL	13C3 HFPO-DA (IS)	50 ug/mL
..HFPO-DA_00004	07/13/20	Wellington Laboratories, Lot HFPOADA0717		(Purchased Reagent)		HFPO-DA	0.5 ug/mL	
HFPO_CAL-5_00081	02/22/18	02/20/18	80:20 Methanol : H ₂ O, Lot 00016	1 mL	HFPO I.S._00009	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO Spike_00004	10 uL	HFPO-DA	5 ug/L
.HFPO I.S._00009	02/20/19	02/20/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00009	1 mL	13C3 HFPO-DA	0.5 ug/mL
					13C3 HFPO-DA	0.5 ug/mL	13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00009	02/20/19	Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		HFPO-DA	50 ug/mL	
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00004	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00004	07/13/20	Wellington Laboratories, Lot HFPOADA0717		(Purchased Reagent)		HFPO-DA	0.5 ug/mL	
HFPO_CAL-6_00080	02/22/18	02/08/18	80:20 Methanol : H ₂ O, Lot 00016	1 mL	HFPO I.S._00008	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO Spike_00004	20 uL	13C3 HFPO-DA (IS)	10 ug/L
.HFPO I.S._00008	12/12/18	01/30/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00008	1 mL	HFPO-DA	10 ug/L
					13C3 HFPO-DA	0.5 ug/mL	13C3 HFPO-DA (IS)	0.5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..13C3 HFPO-DA_00008	01/30/19		Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		13C3 HFPO-DA (IS)	0.5 ug/mL
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS MeOH 00110	100 mL	HFPO-DA_00004	1 mL	13C3 HFPO-DA	50 ug/mL
..HFPO-DA_00004	07/13/20		Wellington Laboratories, Lot HFPOADA0717		(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-6_00081	02/22/18	02/20/18	80:20 Methanol : H ₂ O, Lot 00016	1 mL	HFPO I.S._00009	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO Spike_00004	20 uL	HFPO-DA	10 ug/L
.HFPO I.S._00009	02/20/19	02/20/18	LCMS Grade MeOH, Lot LCMS MeOH 00110	100 mL	13C3 HFPO-DA_00009	1 mL	13C3 HFPO-DA	0.5 ug/mL
..13C3 HFPO-DA_00009	02/20/19		Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS MeOH 00110	100 mL	HFPO-DA_00004	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00004	07/13/20		Wellington Laboratories, Lot HFPOADA0717		(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-7_00032	02/22/18	02/08/18	80:20 Methanol : H ₂ O, Lot 00016	1 mL	HFPO I.S._00008	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO Spike_00004	50 uL	HFPO-DA	25 ug/L
.HFPO I.S._00008	12/12/18	01/30/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00008	1 mL	13C3 HFPO-DA	0.5 ug/mL
..13C3 HFPO-DA_00008	01/30/19		Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS MeOH 00110	100 mL	HFPO-DA_00004	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00004	07/13/20		Wellington Laboratories, Lot HFPOADA0717		(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-8_00032	02/22/18	02/08/18	80:20 Methanol : H ₂ O, Lot 00016	1 mL	HFPO I.S._00008	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO Spike_00004	100 uL	HFPO-DA	50 ug/L
.HFPO I.S._00008	12/12/18	01/30/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00008	1 mL	13C3 HFPO-DA	0.5 ug/mL
..13C3 HFPO-DA_00008	01/30/19		Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		13C3 HFPO-DA	50 ug/mL
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS MeOH 00110	100 mL	HFPO-DA_00004	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00004	07/13/20		Wellington Laboratories, Lot HFPOADA0717		(Purchased Reagent)		HFPO-DA	50 ug/mL
HFPO_CAL-9_00001	02/22/18	02/08/18	80:20 Methanol : H ₂ O, Lot 00016	1 mL	HFPO I.S._00008	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO Spike_00004	200 uL	13C3 HFPO-DA (IS)	100 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HFPO I.S._00008	12/12/18	01/30/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00008	1 mL	13C3 HFPO-DA	0.5 ug/mL
							13C3 HFPO-DA (IS)	0.5 ug/mL
..13C3 HFPO-DA_00008	01/30/19	Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		1 mL	13C3 HFPO-DA	50 ug/mL
							13C3 HFPO-DA (IS)	50 ug/mL
.HFPO Spike_00004	10/30/18	10/30/17	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	HFPO-DA_00004	1 mL	HFPO-DA	0.5 ug/mL
..HFPO-DA_00004	07/13/20	Wellington Laboratories, Lot HFPOADA0717		(Purchased Reagent)		1 mL	HFPO-DA	50 ug/mL
HFPO_ICV_00034	02/22/18	02/08/18	80:20 Methanol : H ₂ O, Lot 00016	1 mL	HFPO I.S._00008	20 uL	13C3 HFPO-DA	10 ug/L
					HFPO ICV_00001	10 uL	HFPO-DA	1.95009 ug/L
.HFPO I.S._00008	12/12/18	01/30/18	LCMS Grade MeOH, Lot LCMS_MeOH_00110	100 mL	13C3 HFPO-DA_00008	1 mL	13C3 HFPO-DA	0.5 ug/mL
..13C3 HFPO-DA_00008	01/30/19	Wellington Laboratories, Lot M3HFPOADA0817		(Purchased Reagent)		1 mL	13C3 HFPO-DA	50 ug/mL
.HFPO ICV_00001	11/03/18	11/03/17	Methanol, Lot 12345	100 mL	HFPO SS stock_00002	20 uL	HFPO-DA	0.195009 ug/mL
..HFPO SS stock_00002	11/03/18	11/03/17	Methanol, Lot 12345	500 mL	HFPO SS_00003	0.5026 g	HFPO-DA	975.044 ug/mL
...HFPO SS_00003	05/23/21	Synquest Laboratories, Lot Q141-128		(Purchased Reagent)		1 mL	HFPO-DA	97 %

Reagent

13C3 HFPO-DA_00008



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CERTIFICATE OF ANALYSIS DOCUMENTATION

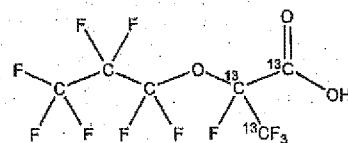
PRODUCT CODE:

M3HFPO-DA

COMPOUND:

2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-¹³C₃-propanoic acid

STRUCTURE:



LOT NUMBER: M3HFPODA0817

CAS #:

Not available.

MOLECULAR FORMULA:

¹³C₃¹²C₃HF₁₁O₃

CONCENTRATION:

50 ± 2.5 µg/ml

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/17/2017

EXPIRY DATE: (mm/dd/yyyy)

08/17/2020

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 333.03

SOLVENT(S): Methanol

ISOTOPIC PURITY: >99% ¹³C

(¹³C₃)

DOCUMENTATION/DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 1.5% of two constitutional isomers.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 08/25/2017

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA

Personal Address / Ex. 6

Fax: 519-822-2849 • Info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

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UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(x_i, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

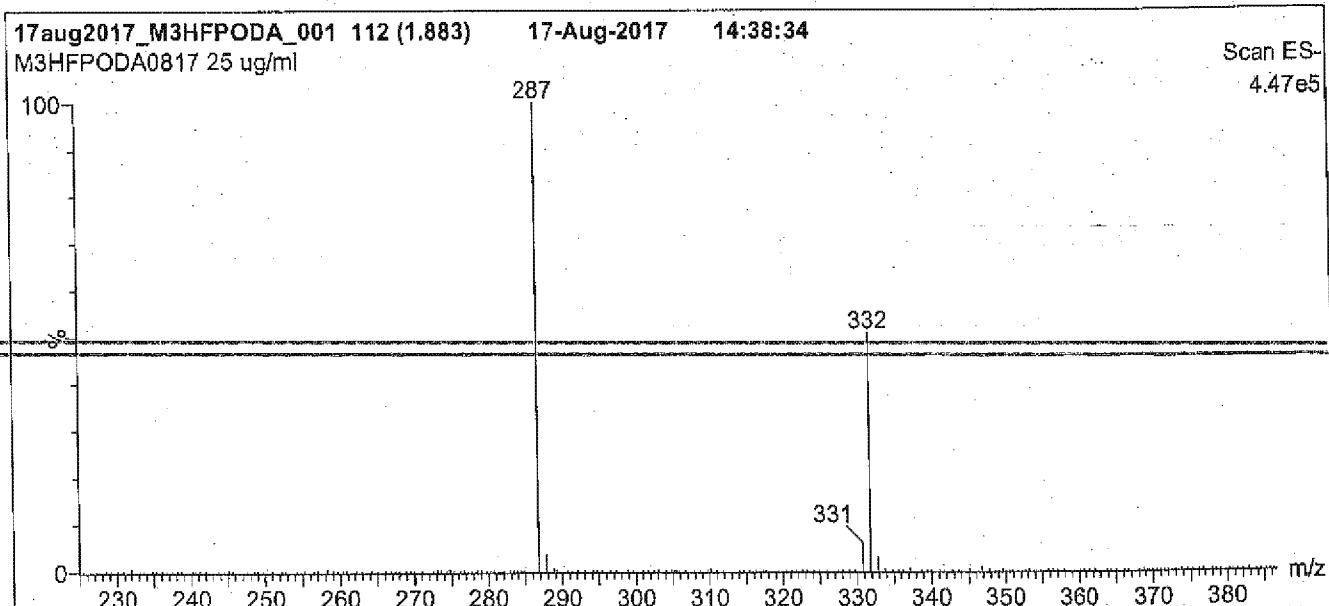
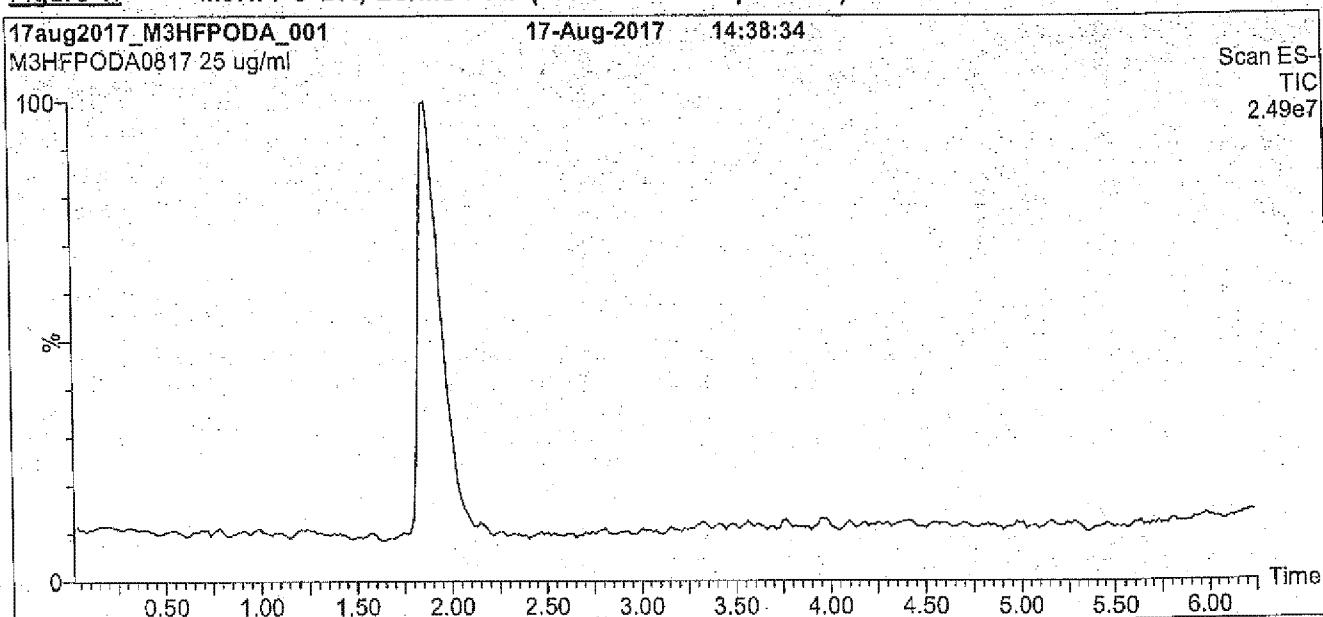
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M3HFPO-DA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 55% MeOH / 45% H₂O with 10 mM NH₄OAc buffer
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.

Time: 10 min

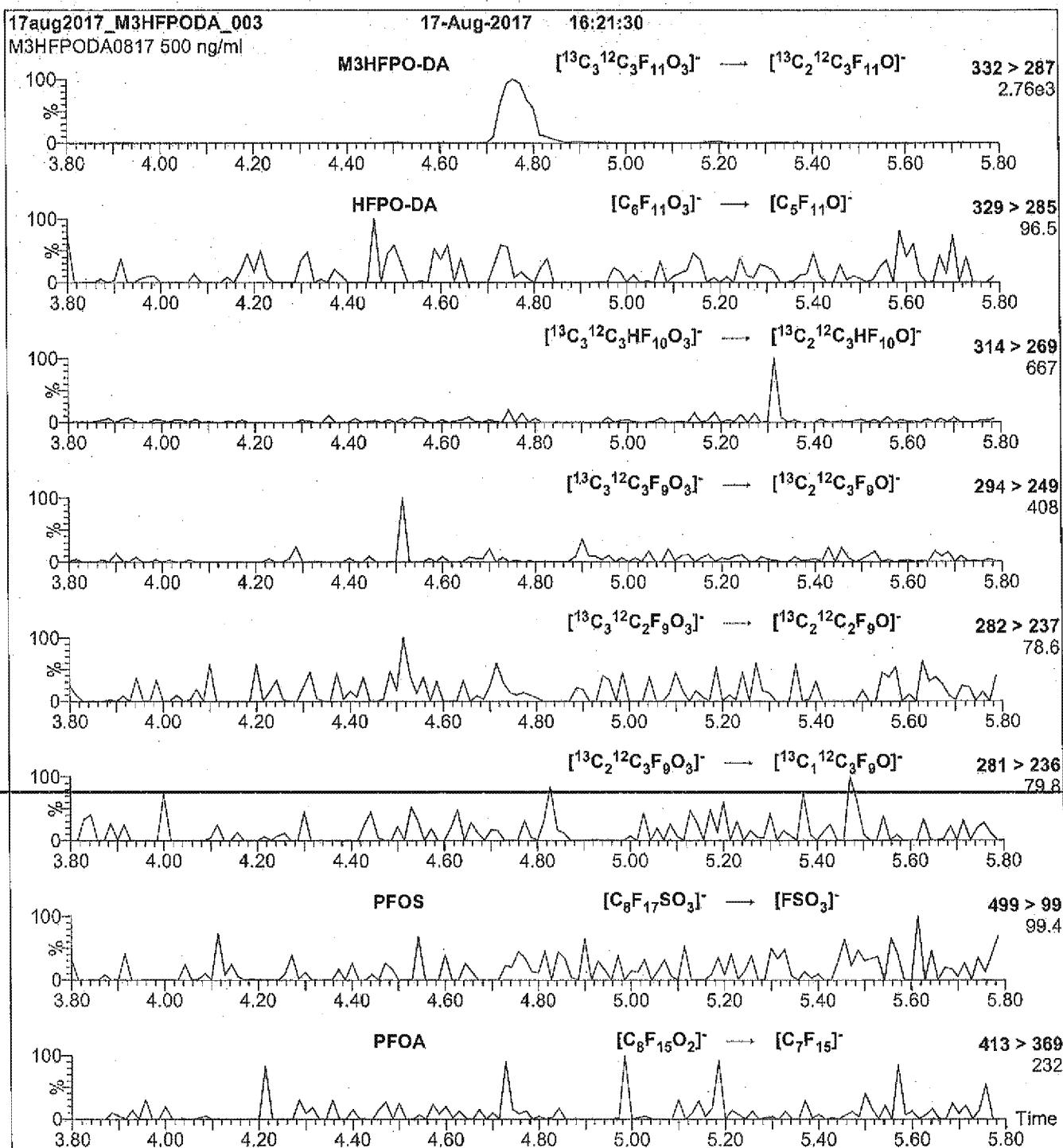
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: M3HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection

10 μ l (500 ng/ml M3HFPO-DA)

Mobile phase: Isocratic 80% MeOH / 20% H₂O wth 10 mM NH₄OAc buffer

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 5

Reagent

13C3 HFPO-DA_00009



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CERTIFICATE OF ANALYSIS DOCUMENTATION

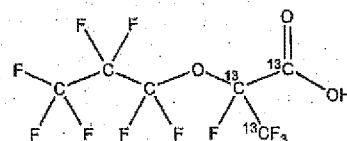
PRODUCT CODE:

M3HFPO-DA

COMPOUND:

2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-¹³C₃-propanoic acid

STRUCTURE:



LOT NUMBER: M3HFPODA0817

CAS #:

Not available.

MOLECULAR FORMULA:

¹³C₃¹²C₃HF₁₁O₃

CONCENTRATION:

50 ± 2.5 µg/ml

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/17/2017

EXPIRY DATE: (mm/dd/yyyy)

08/17/2020

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 333.08

SOLVENT(S): Methanol

ISOTOPIC PURITY: >99% ¹³C

(¹³C₃)

DOCUMENTATION/DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 1.5% of two constitutional isomers.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 08/25/2017

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA

[Personal Address / Ex. 6] • Fax: 519-822-2849 • Info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters

x_1, x_2, \dots, x_n on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of $\pm 5\%$ (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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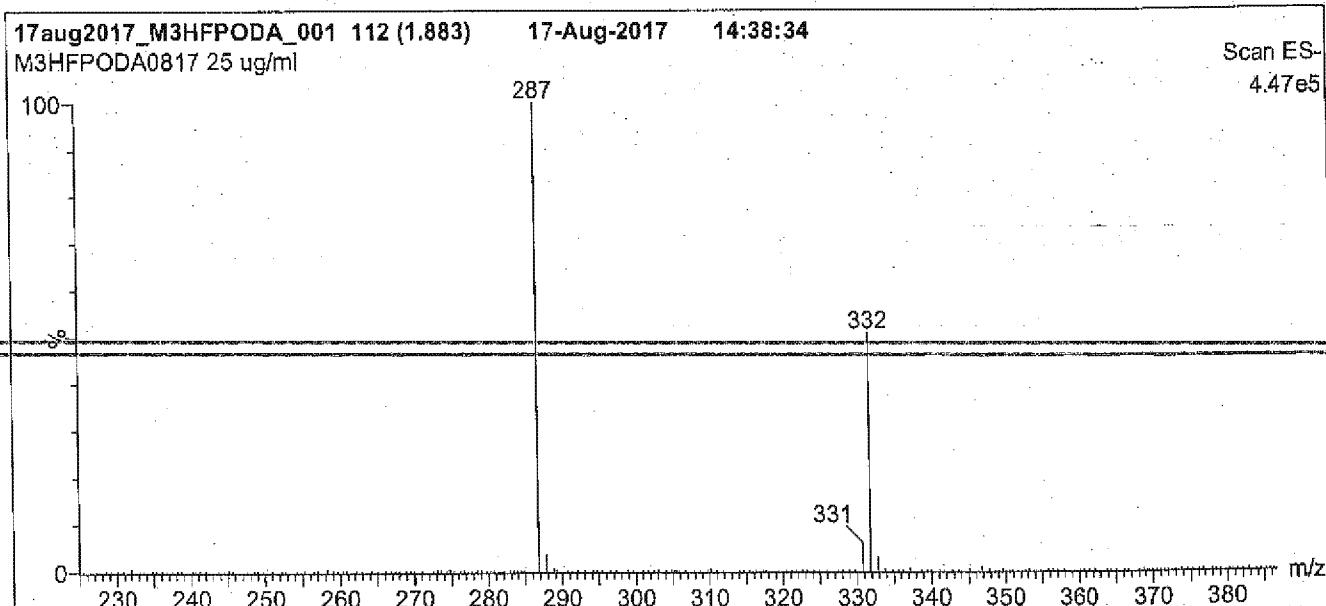
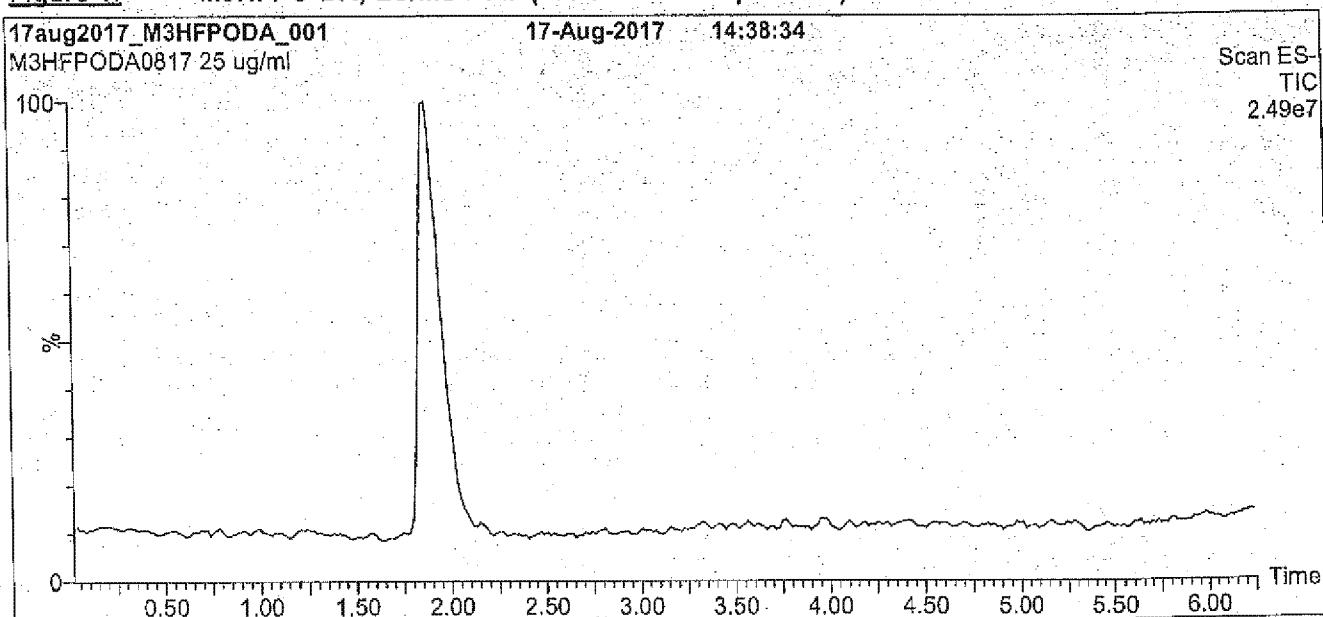
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: M3HFPO-DA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 55% MeOH / 45% H₂O with 10 mM NH₄OAc buffer
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.

Time: 10 min

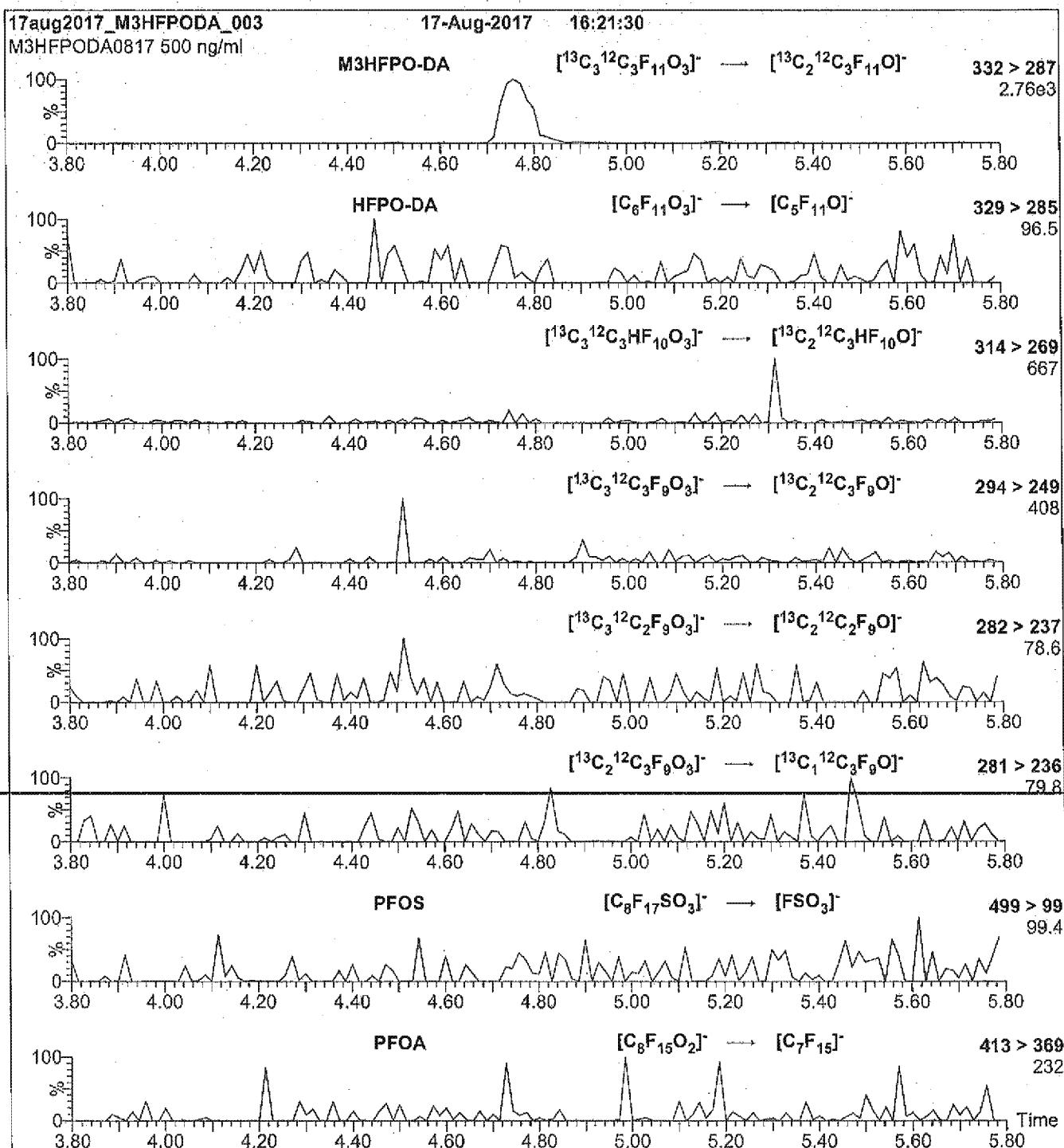
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: M3HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection

10 μ l (500 ng/ml M3HFPO-DA)

Mobile phase: Isocratic 80% MeOH / 20% H₂O wth 10 mM NH₄OAc buffer

Flow: 300 μ l/min

MS Parameters

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 5

Reagent

HFPO-DA 00004



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

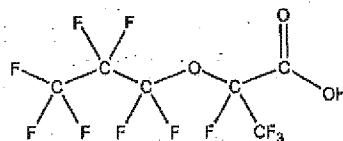
PRODUCT CODE: HFPO-DA

LOT NUMBER: HFPODA0717

COMPOUND: 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid

STRUCTURE:

CAS #: 13252-13-6



MOLECULAR FORMULA: C₆HF₁₁O₃

MOLECULAR WEIGHT: 330.05

CONCENTRATION: 50 ± 2.5 µg/ml

SOLVENT(S): Methanol

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 07/13/2017

EXPIRY DATE: (mm/dd/yyyy) 07/13/2020

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

Date: 07/14/2017

(mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA

Personal Address / Ex. 6

* Fax: 519-822-2849 • Info@well-labs.com

INTENDED USE:

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HOMOGENEITY:

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LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

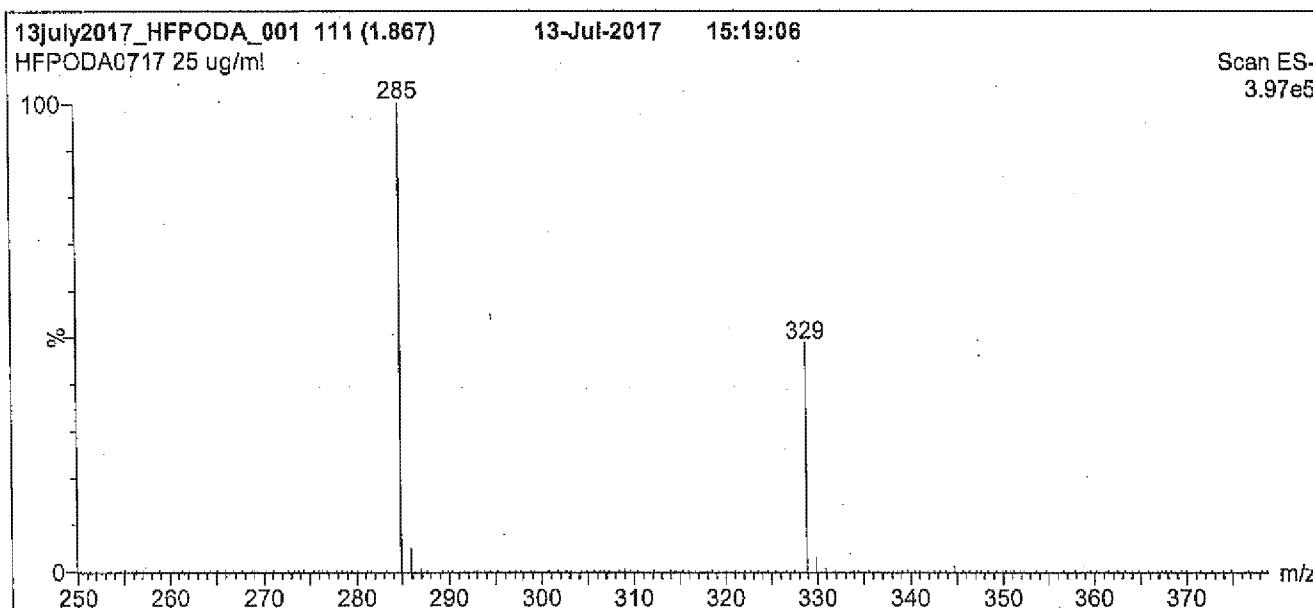
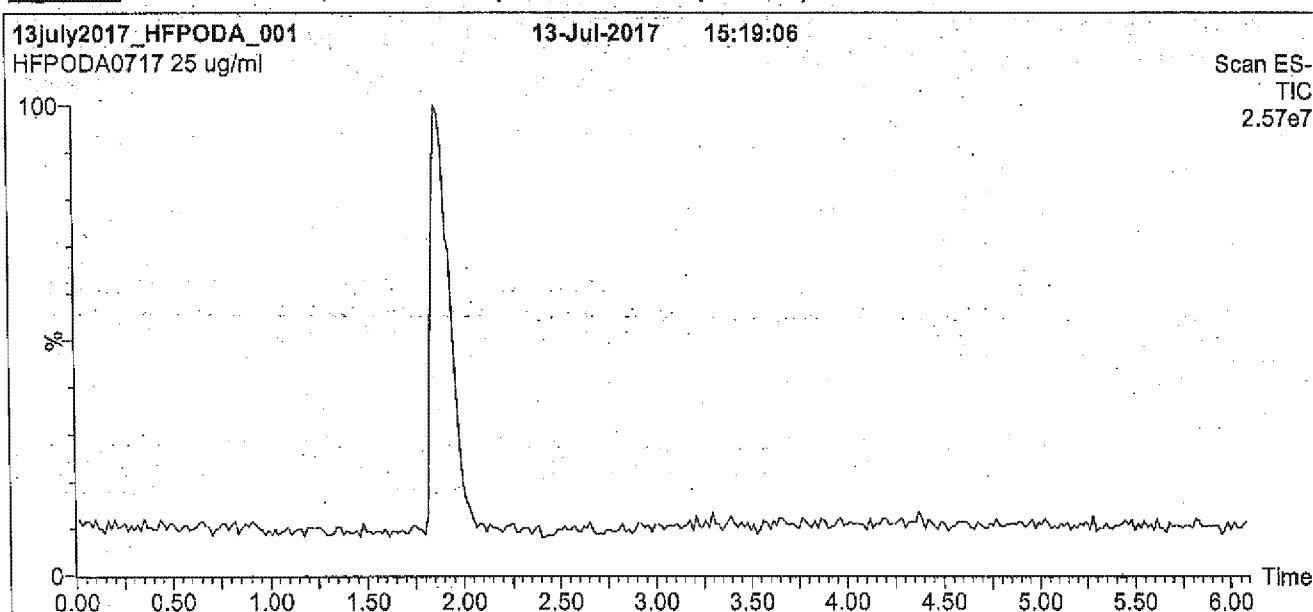
QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: HFPO-DA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

LC: Waters Acquity Ultra Performance LC
MS: Micromass Quattro *micro* API MS

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% MeOH / 45% H₂O with 10 mM NH₄OAc buffer
Ramp to 90% organic over 7.5 min and hold for 1.5 min
before returning to initial conditions in 0.5 min.

Time: 10 min

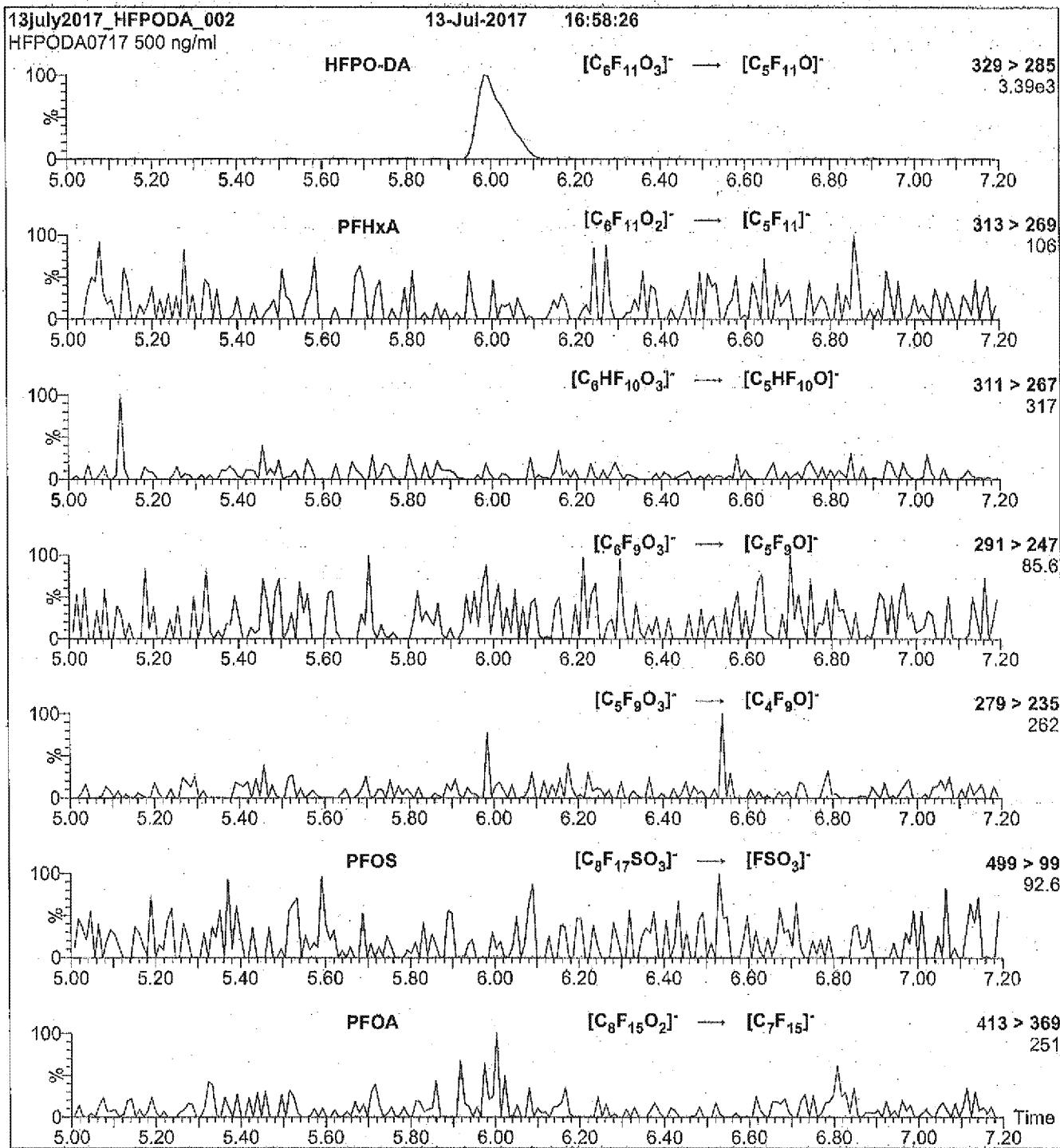
Flow: 300 μ l/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 700

Figure 2: HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: Direct loop injection
10 μ l (500 ng/ml HFPO-DA)

MS Parameters

Collision Gas (mbar) = 3.20e-3
Collision Energy (eV) = 5

Mobile phase: Isocratic 80% MeOH / 20% H₂O with 10 mM NH₄OAc buffer

Flow: 300 μ l/min

8321A_HFPO_Du

HFPO-DA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-106447-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): Synergi Hyd ID: _____

Client Sample ID	Lab Sample ID	HFPEDA #
FAY-VES-OLDDOUTFALL -A-D	280-106447-1	92 D
FAY-VES-OLDDOUTFALL -A	280-106447-2	89 D
FAY-VES-OLDDOUTFALL -B	280-106447-3	90 D
FAY-VES-OLDDOUTFALL -C	280-106447-4	86 D
FAY-VES-OLDDOUTFALL -D	280-106447-5	86 D
FAY-VES-OLDDOUTFALL -E	280-106447-6	91 D
FAY-VES-OLDDOUTFALL SEEP-A	280-106447-7	75
FAY-VES-OLDDOUTFALL CREEK-A	280-106447-8	83 D
FAY-VES-OLDDOUTFALL CREEK-A2	280-106447-9	81 D
FAY-VES-OLDDOUTFALL CREEK-A3	280-106447-10	83 D
FAY-VES-OLDDOUTFALL CREEKWATERBO	280-106447-11	85 D
FAY-VES-FB-021418	280-106447-12	84
	MB 280-405473/1-A	77
	LCS 280-405473/2-A	81
	LCSD 280-405473/4-A	79
	LLCS 280-405473/3-A	83
FAY-VES-OLDDOUTFALL -A MS	280-106447-2 MS	89 D
FAY-VES-OLDDOUTFALL -A DU	280-106447-2 DU	79 D
	DLCK 280-404345/13	104

HFPEDA = 13C3 HFPO-DA

QC LIMITS
50-200

Column to be used to flag recovery values

FORM II 8321A

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: hfpo718B21005.d

Lab ID: LCS 280-405473/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
HFPO-DA	0.200	0.191	95	70-130	

Column to be used to flag recovery and RPD values

FORM III 8321A

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: hfpo718B21007.d

Lab ID: LCSD 280-405473/4-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD REC	%	QC LIMITS		#
					RPD	RPD	
HFPO-DA	0.200	0.197	99	3	20	70-130	

Column to be used to flag recovery and RPD values

FORM III 8321A

FORM III
LCMS LOW LEVEL CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: hfpo718B21006.d

Lab ID: LLCS 280-405473/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LLCS CONCENTRATION (ug/L)	LLCS REC	QC LIMITS REC	#
HFPO-DA	0.0200	0.0193	97	70-130	

Column to be used to flag recovery and RPD values

FORM III 8321A

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: hfpo718B21028.d

Lab ID: 280-106447-2 MS Client ID: FAY-VES-OLDDOUTFALL-A MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
HFPO-DA	0.180	7.4	7.71	163	70-130	4

Column to be used to flag recovery and RPD values

FORM III 8321A

FORM III
LCMS DETECTION LIMIT CHECK STANDARD RECOVERY

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: hfpo718B08044.d

Lab ID: DLCK 280-404345/13 Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	DLCK CONCENTRATION (ug/L)	DLCK % REC	QC LIMITS REC	#
HFPO-DA	0.250	<0.50	90	70-130	

Column to be used to flag recovery and RPD values

FORM III 8321A

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-106447-1
SDG No.:
Lab File ID: hfpo718B21004.d Lab Sample ID: MB 280-405473/1-A
Matrix: Water Date Extracted: 02/20/2018 10:22
Instrument ID: LC_LCMS7 Date Analyzed: 02/21/2018 07:42
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 280-405473/2-A	hfpo718B210 05.d	02/21/2018 07:45
	LLCS 280-405473/3-A	hfpo718B210 06.d	02/21/2018 07:49
	LCSD 280-405473/4-A	hfpo718B210 07.d	02/21/2018 07:52
FAY-VES-OLDOUTFALLSEEP-A	280-106447-7	hfpo718B210 17.d	02/21/2018 08:24
FAY-VES-FB-021418	280-106447-12	hfpo718B210 22.d	02/21/2018 08:41
FAY-VES-OLDOUTFALL-A-D	280-106447-1	hfpo718B210 25.d	02/21/2018 08:50
FAY-VES-OLDOUTFALL-A	280-106447-2	hfpo718B210 26.d	02/21/2018 08:54
FAY-VES-OLDOUTFALL-A DU	280-106447-2 DU	hfpo718B210 27.d	02/21/2018 08:57
FAY-VES-OLDOUTFALL-A MS	280-106447-2 MS	hfpo718B210 28.d	02/21/2018 09:00
FAY-VES-OLDOUTFALL-B	280-106447-3	hfpo718B210 29.d	02/21/2018 09:04
FAY-VES-OLDOUTFALL-C	280-106447-4	hfpo718B210 30.d	02/21/2018 09:07
FAY-VES-OLDOUTFALL-D	280-106447-5	hfpo718B210 31.d	02/21/2018 09:10
FAY-VES-OLDOUTFALL-E	280-106447-6	hfpo718B210 32.d	02/21/2018 09:13
FAY-VES-OLDOUTFALLCREEK-A	280-106447-8	hfpo718B210 33.d	02/21/2018 09:17
FAY-VES-OLDOUTFALLCREEK-A2	280-106447-9	hfpo718B210 34.d	02/21/2018 09:20
FAY-VES-OLDOUTFALLCREEK-A3	280-106447-10	hfpo718B210 36.d	02/21/2018 09:26
FAY-VES-OLDOUTFALLCREEKWATERBO	280-106447-11	hfpo718B210 37.d	02/21/2018 09:30

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDOUTFALL-A-D Lab Sample ID: 280-106447-1

Matrix: Water Lab File ID: hfpo718B21025.d

Analysis Method: 8321A Date Collected: 02/14/2018 12:00

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 288.9 (mL) Date Analyzed: 02/21/2018 08:50

Con. Extract Vol.: 5 (mL) Dilution Factor: 10

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	7.1		0.044	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	92	D	50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21025.d
 Lims ID: 280-106447-A-1-A
 Client ID: FAY-VES-OLDOUTFALL-A-D
 Sample Type: Client
 Inject. Date: 21-Feb-2018 08:50:58 ALS Bottle#: 31 Worklist Smp#: 25
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-A-1-A 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:48:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.961 1.045 -0.084 1.000 68458 0.9169 397
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.961 1.045 -0.084 1.000 68458 1.00 397
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.961 1.056 -0.095 1.000 2983479 40.9 168

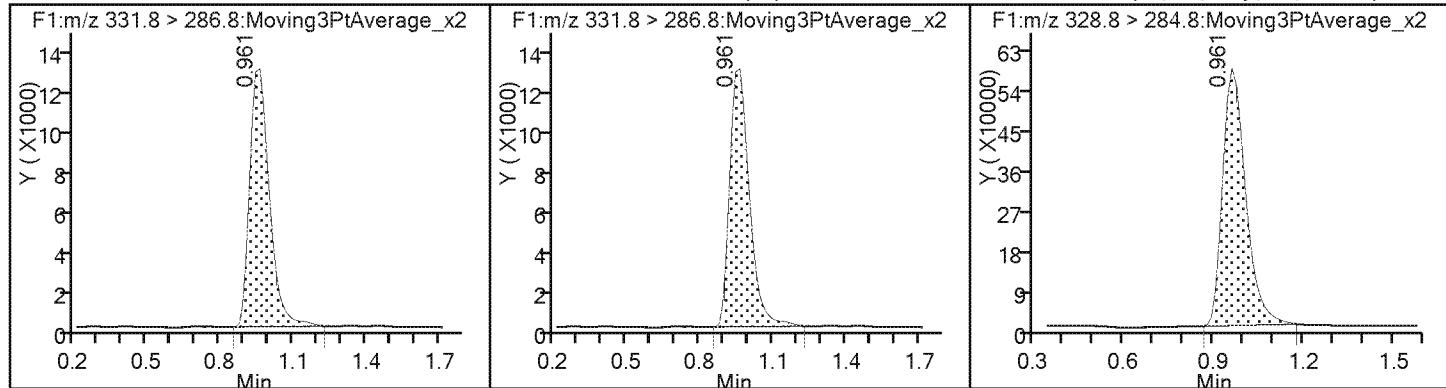
TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21025.d
Injection Date: 21-Feb-2018 08:50:58 Instrument ID: LC_LCMS7
Lims ID: 280-106447-A-1-A Lab Sample ID: 280-106447-1
Client ID: FAY-VES-OLDDOUTFALL-A-D
Operator ID: JBH ALS Bottle#: 31 Worklist Smp#: 25
Injection Vol: 20.0 ul Dil. Factor: 10.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21025.d
 Lims ID: 280-106447-A-1-A
 Client ID: FAY-VES-OLDOUTFALL-A-D
 Sample Type: Client
 Inject. Date: 21-Feb-2018 08:50:58 ALS Bottle#: 31 Worklist Smp#: 25
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-A-1-A 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:48:32

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	0.9169	91.69

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDOUTFALL-A Lab Sample ID: 280-106447-2

Matrix: Water Lab File ID: hfpo718B21026.d

Analysis Method: 8321A Date Collected: 02/14/2018 12:00

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 295.8 (mL) Date Analyzed: 02/21/2018 08:54

Con. Extract Vol.: 5 (mL) Dilution Factor: 10

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	7.4		0.043	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	89	D	50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21026.d
 Lims ID: 280-106447-A-2-A
 Client ID: FAY-VES-OLDOUTFALL-A
 Sample Type: Client
 Inject. Date: 21-Feb-2018 08:54:14 ALS Bottle#: 32 Worklist Smp#: 26
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-A-2-A 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

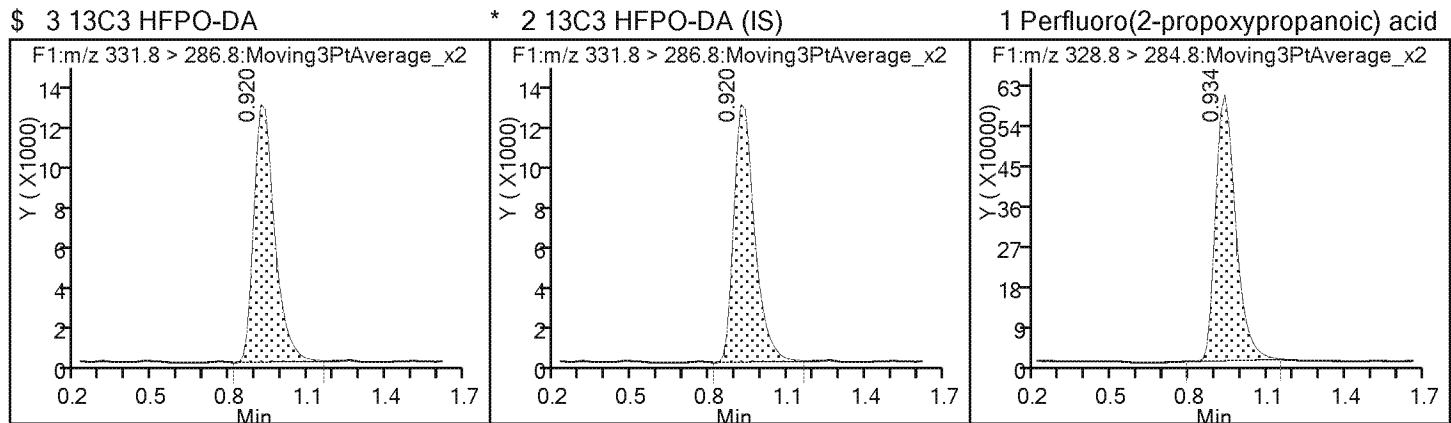
First Level Reviewer: meyera Date: 21-Feb-2018 10:05:52

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.920 1.045 -0.125 1.000 66611 0.8922 288
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.920 1.045 -0.125 1.000 66611 1.00 288
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.934 1.056 -0.122 1.000 3113217 43.9 206

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21026.d
Injection Date: 21-Feb-2018 08:54:14 Instrument ID: LC_LCMS7
Lims ID: 280-106447-A-2-A Lab Sample ID: 280-106447-2
Client ID: FAY-VES-OLDDOUTFALL-A
Operator ID: JBH ALS Bottle#: 32 Worklist Smp#: 26
Injection Vol: 20.0 ul Dil. Factor: 10.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21026.d
 Lims ID: 280-106447-A-2-A
 Client ID: FAY-VES-OLDOUTFALL-A
 Sample Type: Client
 Inject. Date: 21-Feb-2018 08:54:14 ALS Bottle#: 32 Worklist Smp#: 26
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-A-2-A 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:05:52

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	0.8922	89.22

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDDOUTFALL-B Lab Sample ID: 280-106447-3

Matrix: Water Lab File ID: hfpo718B21029.d

Analysis Method: 8321A Date Collected: 02/14/2018 12:45

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 292.6 (mL) Date Analyzed: 02/21/2018 09:04

Con. Extract Vol.: 5 (mL) Dilution Factor: 10

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	7.3		0.044	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	90	D	50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21029.d
 Lims ID: 280-106447-A-3-A
 Client ID: FAY-VES-OLDOUTFALL-B
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:04:04 ALS Bottle#: 35 Worklist Smp#: 29
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-A-3-A 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

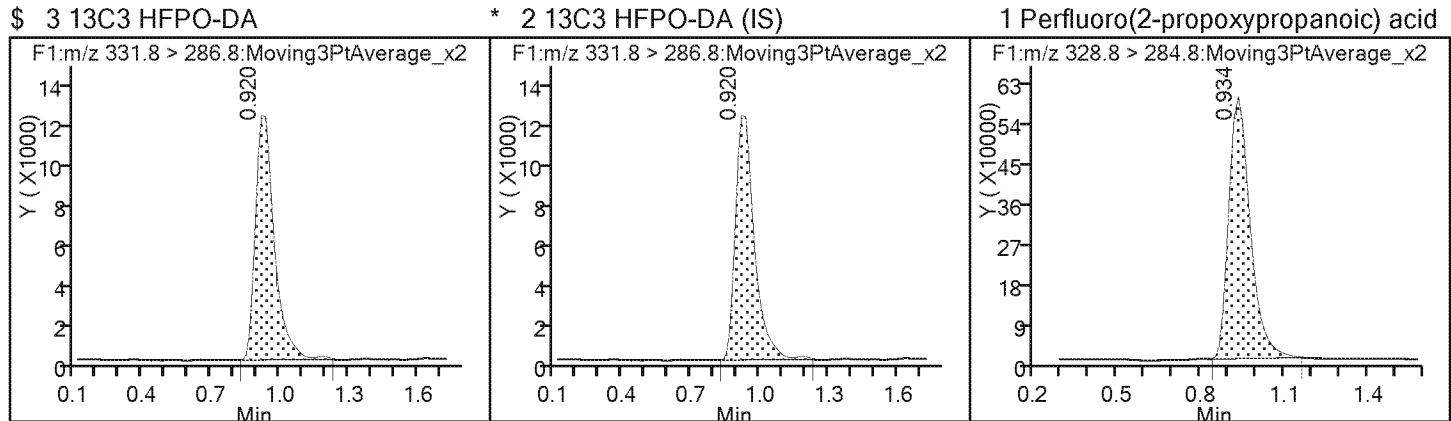
First Level Reviewer: meyera Date: 21-Feb-2018 10:05:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.920 1.045 -0.125 1.000 67022 0.8977 313
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.920 1.045 -0.125 67022 1.00 313
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.934 1.056 -0.122 1.000 3047702 42.7 200

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21029.d
Injection Date: 21-Feb-2018 09:04:04 Instrument ID: LC_LCMS7
Lims ID: 280-106447-A-3-A Lab Sample ID: 280-106447-3
Client ID: FAY-VES-OLDOUTFALL-B
Operator ID: JBH ALS Bottle#: 35 Worklist Smp#: 29
Injection Vol: 20.0 ul Dil. Factor: 10.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21029.d
 Lims ID: 280-106447-A-3-A
 Client ID: FAY-VES-OLDOUTFALL-B
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:04:04 ALS Bottle#: 35 Worklist Smp#: 29
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-A-3-A 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:05:58

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	0.8977	89.77

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDDOUTFALL-C Lab Sample ID: 280-106447-4

Matrix: Water Lab File ID: hfpo718B21030.d

Analysis Method: 8321A Date Collected: 02/14/2018 13:38

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 270.9 (mL) Date Analyzed: 02/21/2018 09:07

Con. Extract Vol.: 5 (mL) Dilution Factor: 10

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	9.7		0.047	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	86	D	50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21030.d
 Lims ID: 280-106447-B-4-A
 Client ID: FAY-VES-OLDOUTFALL-C
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:07:19 ALS Bottle#: 36 Worklist Smp#: 30
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-B-4-A 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.934 1.045 -0.111 1.000 63844 0.8551 301
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.934 1.045 -0.111 1.000 63844 1.00 301
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.934 1.056 -0.122 1.000 3577772 52.6 213

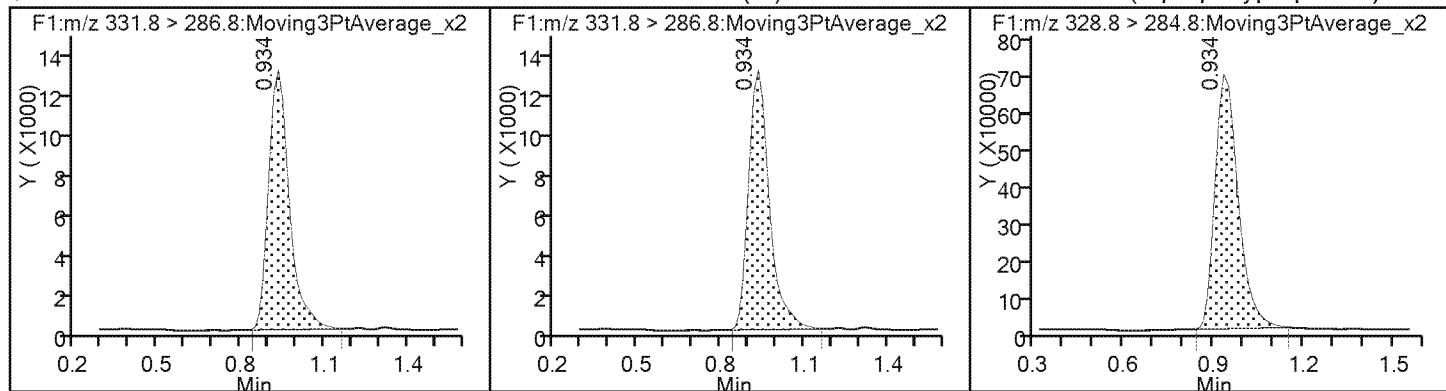
TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21030.d
Injection Date: 21-Feb-2018 09:07:19 Instrument ID: LC_LCMS7
Lims ID: 280-106447-B-4-A Lab Sample ID: 280-106447-4
Client ID: FAY-VES-OLDOUTFALL-C
Operator ID: JBH ALS Bottle#: 36 Worklist Smp#: 30
Injection Vol: 20.0 ul Dil. Factor: 10.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21030.d
 Lims ID: 280-106447-B-4-A
 Client ID: FAY-VES-OLDOUTFALL-C
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:07:19 ALS Bottle#: 36 Worklist Smp#: 30
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-B-4-A 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:03

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	0.8551	85.51

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDOUTFALL-D Lab Sample ID: 280-106447-5

Matrix: Water Lab File ID: hfpo718B21031.d

Analysis Method: 8321A Date Collected: 02/14/2018 14:05

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 283.5 (mL) Date Analyzed: 02/21/2018 09:10

Con. Extract Vol.: 5 (mL) Dilution Factor: 10

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	13		0.045	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	86	D	50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21031.d
 Lims ID: 280-106447-B-5-A
 Client ID: FAY-VES-OLDOUTFALL-D
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:10:35 ALS Bottle#: 37 Worklist Smp#: 31
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-B-5-A 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.934 1.045 -0.111 1.000 63899 0.8559 283
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.934 1.045 -0.111 1.000 63899 1.00 283
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.934 1.056 -0.122 1.000 4891385 71.9 265

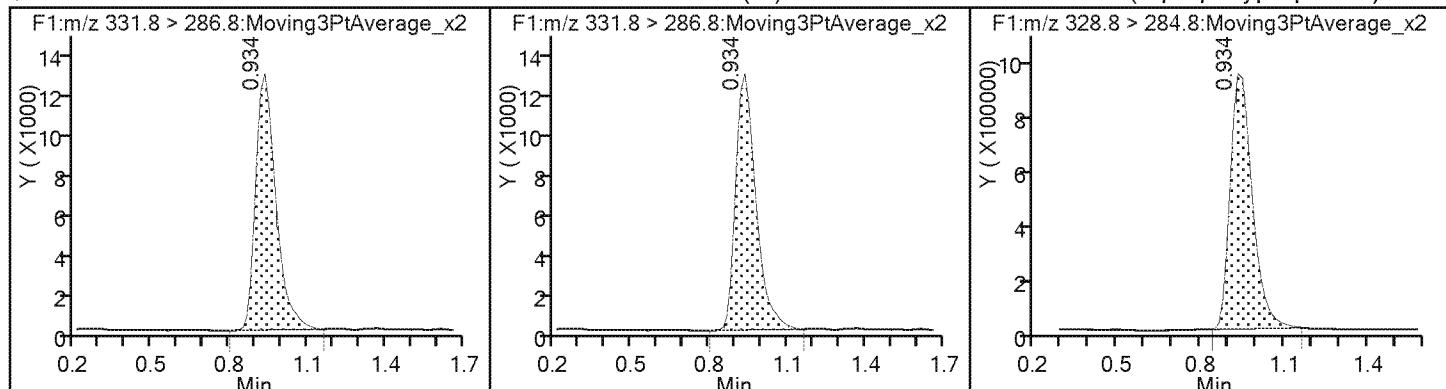
TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21031.d
Injection Date: 21-Feb-2018 09:10:35 Instrument ID: LC_LCMS7
Lims ID: 280-106447-B-5-A Lab Sample ID: 280-106447-5
Client ID: FAY-VES-OLDOUTFALL-D
Operator ID: JBH ALS Bottle#: 37 Worklist Smp#: 31
Injection Vol: 20.0 ul Dil. Factor: 10.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21031.d
 Lims ID: 280-106447-B-5-A
 Client ID: FAY-VES-OLDOUTFALL-D
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:10:35 ALS Bottle#: 37 Worklist Smp#: 31
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-B-5-A 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:05

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	0.8559	85.59

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDOUTFALL-E Lab Sample ID: 280-106447-6

Matrix: Water Lab File ID: hfpo718B21032.d

Analysis Method: 8321A Date Collected: 02/14/2018 14:15

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 281(mL) Date Analyzed: 02/21/2018 09:13

Con. Extract Vol.: 5(mL) Dilution Factor: 10

Injection Volume: 20(µL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	11		0.045	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	91	D	50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21032.d
 Lims ID: 280-106447-B-6-A
 Client ID: FAY-VES-OLDOUTFALL-E
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:13:52 ALS Bottle#: 38 Worklist Smp#: 32
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-B-6-A 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

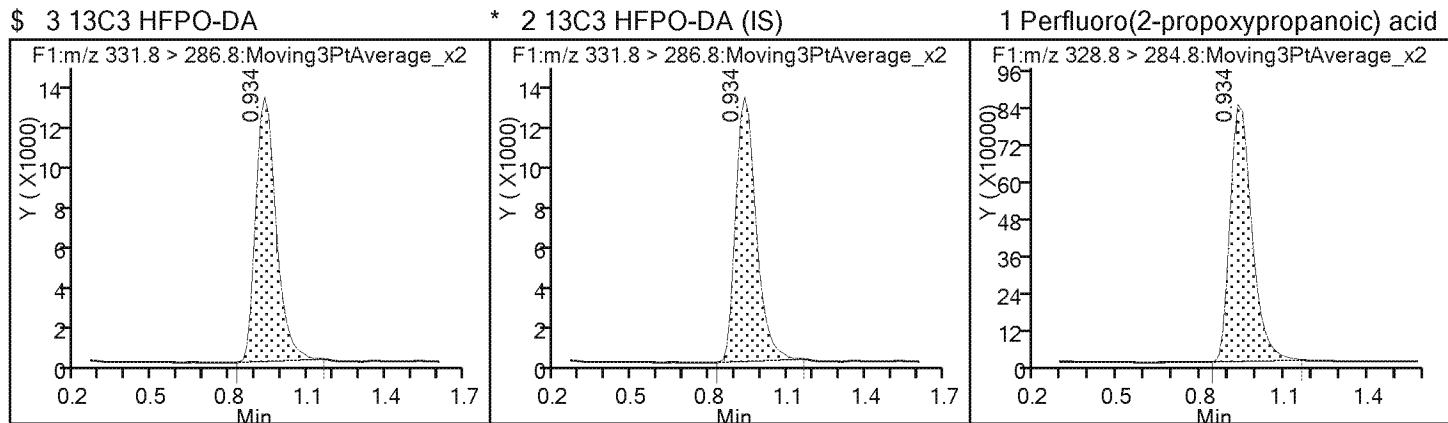
First Level Reviewer: meyera Date: 21-Feb-2018 10:06:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.934 1.045 -0.111 1.000 67956 0.9102 290
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.934 1.045 -0.111 1.000 67956 1.00 290
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.934 1.056 -0.122 1.000 4398359 60.8 277

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21032.d
Injection Date: 21-Feb-2018 09:13:52 Instrument ID: LC_LCMS7
Lims ID: 280-106447-B-6-A Lab Sample ID: 280-106447-6
Client ID: FAY-VES-OLDOUTFALL-E
Operator ID: JBH ALS Bottle#: 38 Worklist Smp#: 32
Injection Vol: 20.0 ul Dil. Factor: 10.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21032.d
 Lims ID: 280-106447-B-6-A
 Client ID: FAY-VES-OLDOUTFALL-E
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:13:52 ALS Bottle#: 38 Worklist Smp#: 32
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-B-6-A 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:07

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	0.9102	91.02

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDOUTFALLSLEEP-A Lab Sample ID: 280-106447-7

Matrix: Water Lab File ID: hfpo718B21017.d

Analysis Method: 8321A Date Collected: 02/14/2018 13:10

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 287.4 (mL) Date Analyzed: 02/21/2018 08:24

Con. Extract Vol.: 5 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	1.3		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	75		50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21017.d
 Lims ID: 280-106447-B-7-A
 Client ID: FAY-VES-OLDOUTFALLSEEP-A
 Sample Type: Client
 Inject. Date: 21-Feb-2018 08:24:47 ALS Bottle#: 24 Worklist Smp#: 17
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 280-106447-B-7-A
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:42 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

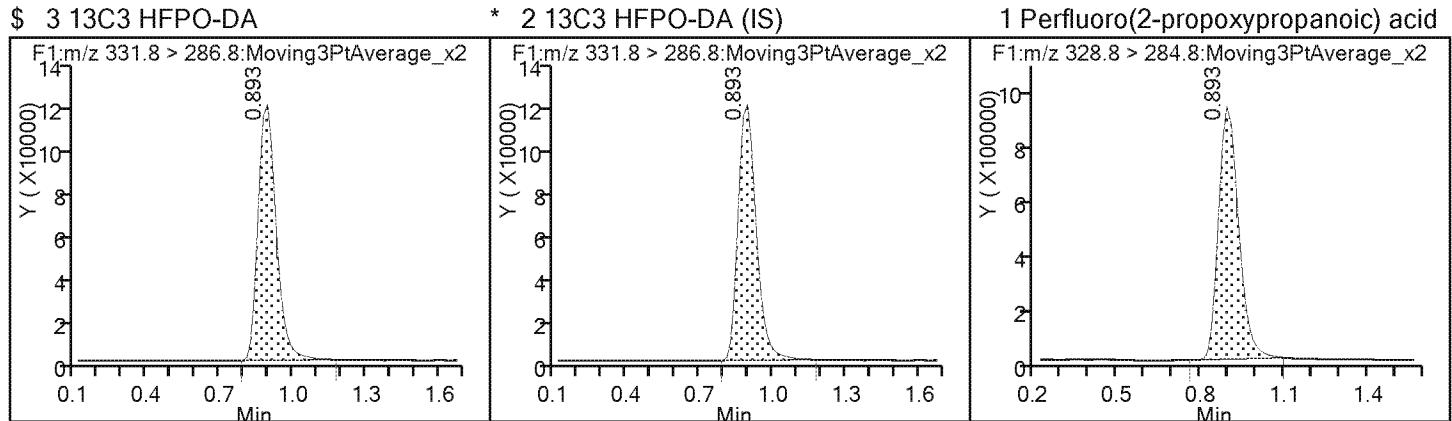
First Level Reviewer: meyera Date: 21-Feb-2018 10:05:35

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.893 1.045 -0.152 1.000 563629 7.55 1144
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.893 1.045 -0.152 1.000 563629 10.0 1144
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.893 1.056 -0.163 1.000 4389387 73.2 297

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21017.d
Injection Date: 21-Feb-2018 08:24:47 Instrument ID: LC_LCMS7
Lims ID: 280-106447-B-7-A Lab Sample ID: 280-106447-7
Client ID: FAY-VES-OLDDOUTFALLSEEP-A
Operator ID: JBH ALS Bottle#: 24 Worklist Smp#: 17
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21017.d
 Lims ID: 280-106447-B-7-A
 Client ID: FAY-VES-OLDOUTFALLSEEP-A
 Sample Type: Client
 Inject. Date: 21-Feb-2018 08:24:47 ALS Bottle#: 24 Worklist Smp#: 17
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 280-106447-B-7-A
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:42 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:05:35

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	7.55	75.49

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDDOUTFALLCREEK-A Lab Sample ID: 280-106447-8

Matrix: Water Lab File ID: hfpo718B21033.d

Analysis Method: 8321A Date Collected: 02/14/2018 13:22

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 293.6 (mL) Date Analyzed: 02/21/2018 09:17

Con. Extract Vol.: 5 (mL) Dilution Factor: 2

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	2.3		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	83	D	50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21033.d
 Lims ID: 280-106447-B-8-A
 Client ID: FAY-VES-OLDOUTFALLCREEK-A
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:17:08 ALS Bottle#: 39 Worklist Smp#: 33
 Injection Vol: 20.0 ul Dil. Factor: 2.0000
 Sample Info: 280-106447-B-8-A 2x 500uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.920 1.045 -0.125 1.000 308069 4.13 921
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.920 1.045 -0.125 1.000 308069 5.00 921
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.934 1.056 -0.122 1.000 4494062 68.5 305

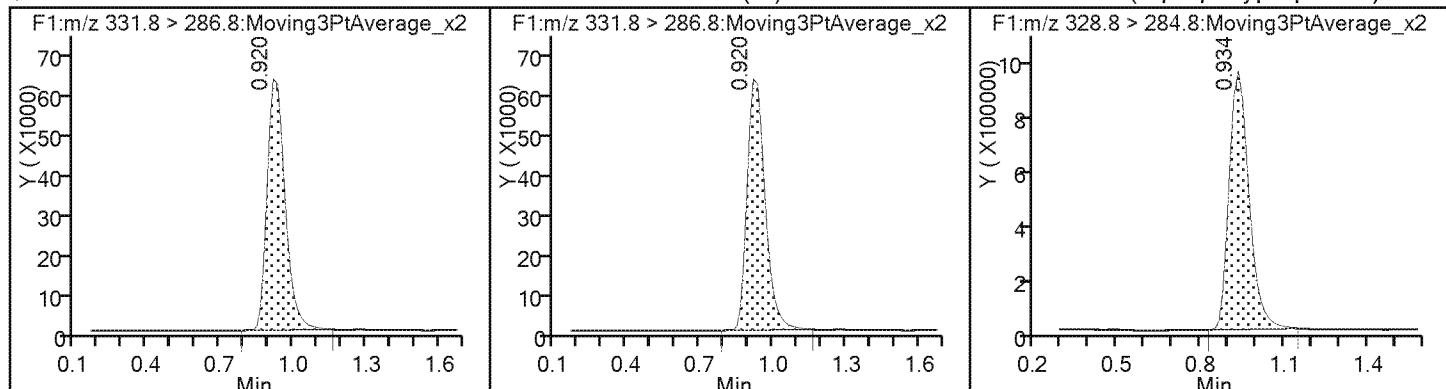
TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21033.d
Injection Date: 21-Feb-2018 09:17:08 Instrument ID: LC_LCMS7
Lims ID: 280-106447-B-8-A Lab Sample ID: 280-106447-8
Client ID: FAY-VES-OLDOUTFALLCREEK-A
Operator ID: JBH ALS Bottle#: 39 Worklist Smp#: 33
Injection Vol: 20.0 ul Dil. Factor: 2.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21033.d
 Lims ID: 280-106447-B-8-A
 Client ID: FAY-VES-OLDOUTFALLCREEK-A
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:17:08 ALS Bottle#: 39 Worklist Smp#: 33
 Injection Vol: 20.0 ul Dil. Factor: 2.0000
 Sample Info: 280-106447-B-8-A 2x 500uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:09

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	4.13	82.53

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDDOUTFALLCREEK-A Lab Sample ID: 280-106447-9
2

Matrix: Water Lab File ID: hfpo718B21034.d

Analysis Method: 8321A Date Collected: 02/14/2018 16:30

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 290 (mL) Date Analyzed: 02/21/2018 09:20

Con. Extract Vol.: 5 (mL) Dilution Factor: 2

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	2.5		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	81	D	50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21034.d
 Lims ID: 280-106447-A-9-A
 Client ID: FAY-VES-OLDOUTFALLCREEK-A2
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:20:23 ALS Bottle#: 40 Worklist Smp#: 34
 Injection Vol: 20.0 ul Dil. Factor: 2.0000
 Sample Info: 280-106447-A-9-A 2x 500uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.920 1.045 -0.125 1.000 301182 4.03 950
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.920 1.045 -0.125 1.000 301182 5.00 950
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.920 1.056 -0.136 1.000 4633267 72.3 361

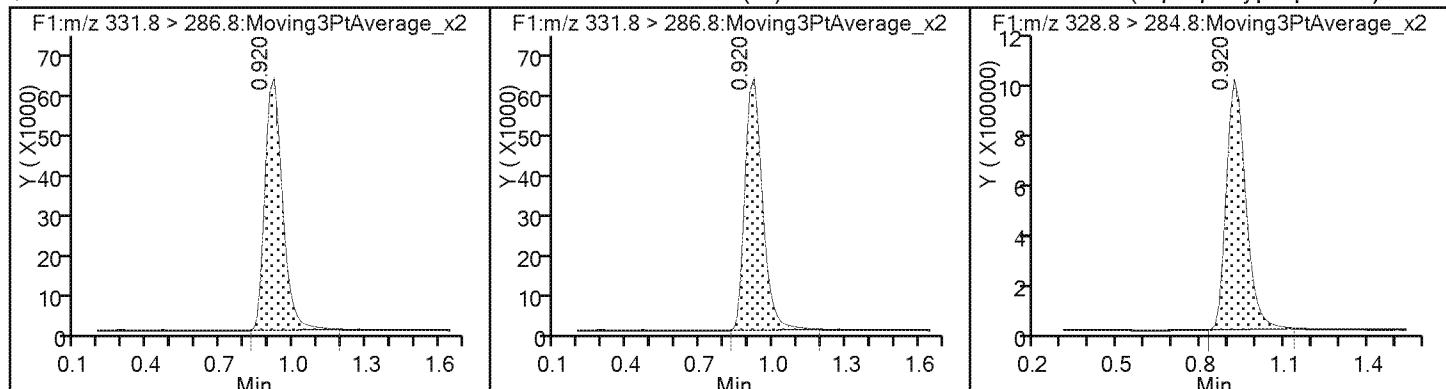
TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21034.d
Injection Date: 21-Feb-2018 09:20:23 Instrument ID: LC_LCMS7
Lims ID: 280-106447-A-9-A Lab Sample ID: 280-106447-9
Client ID: FAY-VES-OLDOUTFALLCREEK-A2
Operator ID: JBH ALS Bottle#: 40 Worklist Smp#: 34
Injection Vol: 20.0 ul Dil. Factor: 2.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21034.d
 Lims ID: 280-106447-A-9-A
 Client ID: FAY-VES-OLDOUTFALLCREEK-A2
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:20:23 ALS Bottle#: 40 Worklist Smp#: 34
 Injection Vol: 20.0 ul Dil. Factor: 2.0000
 Sample Info: 280-106447-A-9-A 2x 500uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:11

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	4.03	80.68

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDDOUTFALLCREEK-A Lab Sample ID: 280-106447-10
3

Matrix: Water Lab File ID: hfpo718B21036.d

Analysis Method: 8321A Date Collected: 02/14/2018 16:45

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 294.9 (mL) Date Analyzed: 02/21/2018 09:26

Con. Extract Vol.: 5 (mL) Dilution Factor: 2

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	2.2		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	83	D	50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21036.d
 Lims ID: 280-106447-B-10-A
 Client ID: FAY-VES-OLDOUTFALLCREEK-A3
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:26:56 ALS Bottle#: 41 Worklist Smp#: 36
 Injection Vol: 20.0 ul Dil. Factor: 2.0000
 Sample Info: 280-106447-B-10-A 2x 500uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:53 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

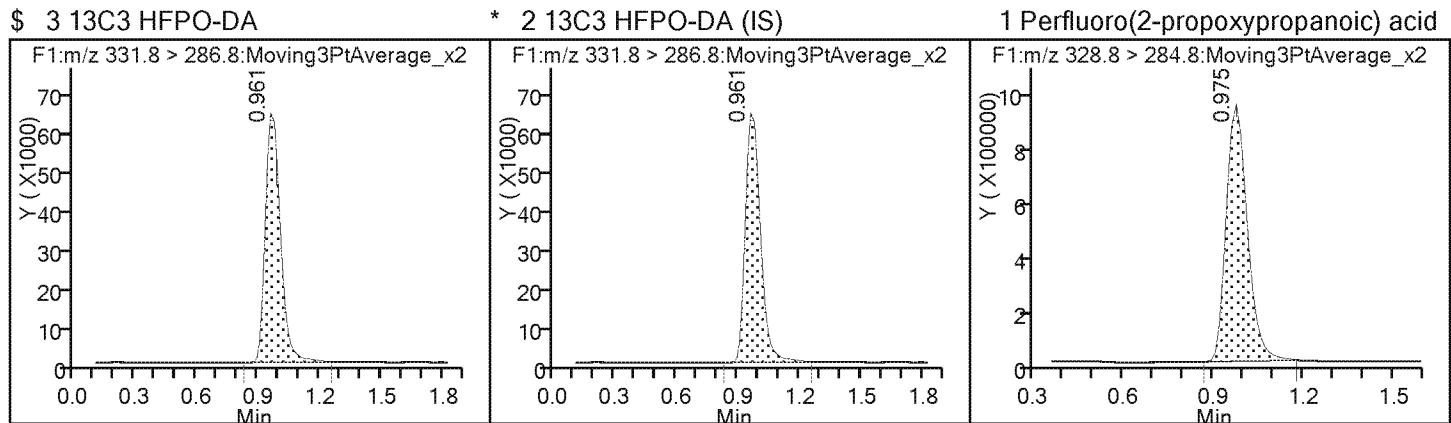
First Level Reviewer: meyera Date: 21-Feb-2018 10:06:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.961 1.045 -0.084 1.000 310546 4.16 1048
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.961 1.045 -0.084 1.000 310546 5.00 1048
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.975 1.056 -0.081 1.000 4371548 66.1 258

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21036.d
Injection Date: 21-Feb-2018 09:26:56 Instrument ID: LC_LCMS7
Lims ID: 280-106447-B-10-A Lab Sample ID: 280-106447-10
Client ID: FAY-VES-OLDOUTFALLCREEK-A3
Operator ID: JBH ALS Bottle#: 41 Worklist Smp#: 36
Injection Vol: 20.0 ul Dil. Factor: 2.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21036.d
 Lims ID: 280-106447-B-10-A
 Client ID: FAY-VES-OLDOUTFALLCREEK-A3
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:26:56 ALS Bottle#: 41 Worklist Smp#: 36
 Injection Vol: 20.0 ul Dil. Factor: 2.0000
 Sample Info: 280-106447-B-10-A 2x 500uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:53 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:15

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	4.16	83.19

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDDOUTFALLCREEKWA Lab Sample ID: 280-106447-11
TERBO

Matrix: Water Lab File ID: hfpo718B21037.d

Analysis Method: 8321A Date Collected: 02/14/2018 17:00

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 294.1 (mL) Date Analyzed: 02/21/2018 09:30

Con. Extract Vol.: 5 (mL) Dilution Factor: 2

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	1.8		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	85	D	50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21037.d
 Lims ID: 280-106447-B-11-A
 Client ID: FAY-VES-OLDOUTFALLCREEKWATERBO
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:30:12 ALS Bottle#: 42 Worklist Smp#: 37
 Injection Vol: 20.0 ul Dil. Factor: 2.0000
 Sample Info: 280-106447-B-11-A 2x 500uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:53 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

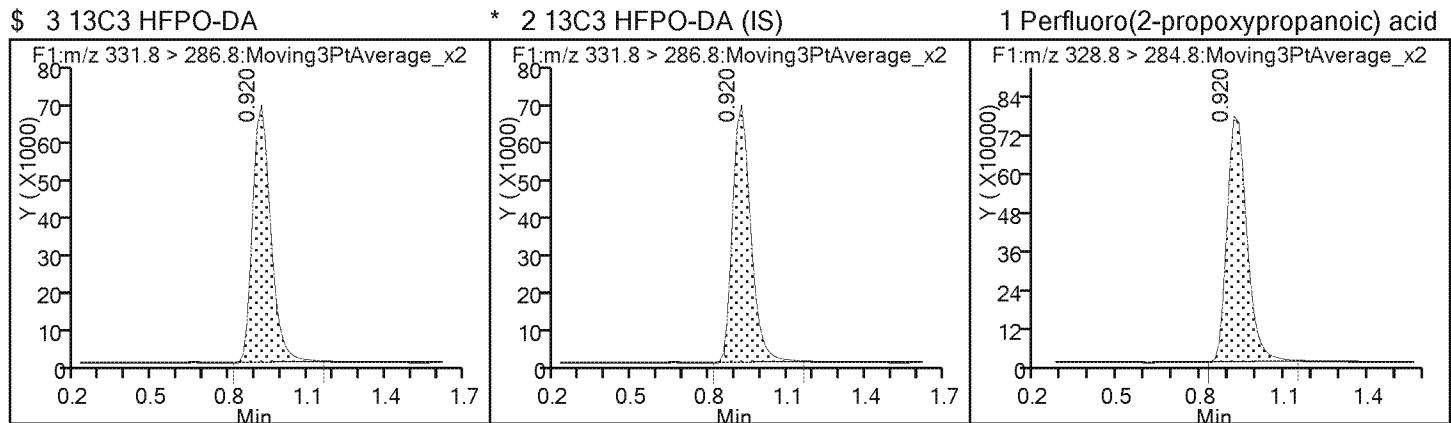
First Level Reviewer: meyera Date: 21-Feb-2018 10:06:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.920 1.045 -0.125 1.000 317132 4.25 916
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.920 1.045 -0.125 1.000 317132 5.00 916
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.920 1.056 -0.136 1.000 3625110 53.7 449

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21037.d
Injection Date: 21-Feb-2018 09:30:12 Instrument ID: LC_LCMS7
Lims ID: 280-106447-B-11-A Lab Sample ID: 280-106447-11
Client ID: FAY-VES-OLDOUTFALLCREEKWATERBO
Operator ID: JBH ALS Bottle#: 42 Worklist Smp#: 37
Injection Vol: 20.0 ul Dil. Factor: 2.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21037.d
 Lims ID: 280-106447-B-11-A
 Client ID: FAY-VES-OLDOUTFALLCREEKWATERBO
 Sample Type: Client
 Inject. Date: 21-Feb-2018 09:30:12 ALS Bottle#: 42 Worklist Smp#: 37
 Injection Vol: 20.0 ul Dil. Factor: 2.0000
 Sample Info: 280-106447-B-11-A 2x 500uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:53 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:17

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	4.25	84.95

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-FB-021418 Lab Sample ID: 280-106447-12

Matrix: Water Lab File ID: hfpo718B21022.d

Analysis Method: 8321A Date Collected: 02/14/2018 07:00

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 293.5 (mL) Date Analyzed: 02/21/2018 08:41

Con. Extract Vol.: 5 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	<0.010		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	84		50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21022.d
 Lims ID: 280-106447-A-12-A
 Client ID: FAY-VES-FB-021418
 Sample Type: Client
 Inject. Date: 21-Feb-2018 08:41:09 ALS Bottle#: 29 Worklist Smp#: 22
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 280-106447-A-12-A
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:42 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:48:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.893 1.045 -0.152 1.000 629604 8.43 1346
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.893 1.045 -0.152 629604 10.0 1346

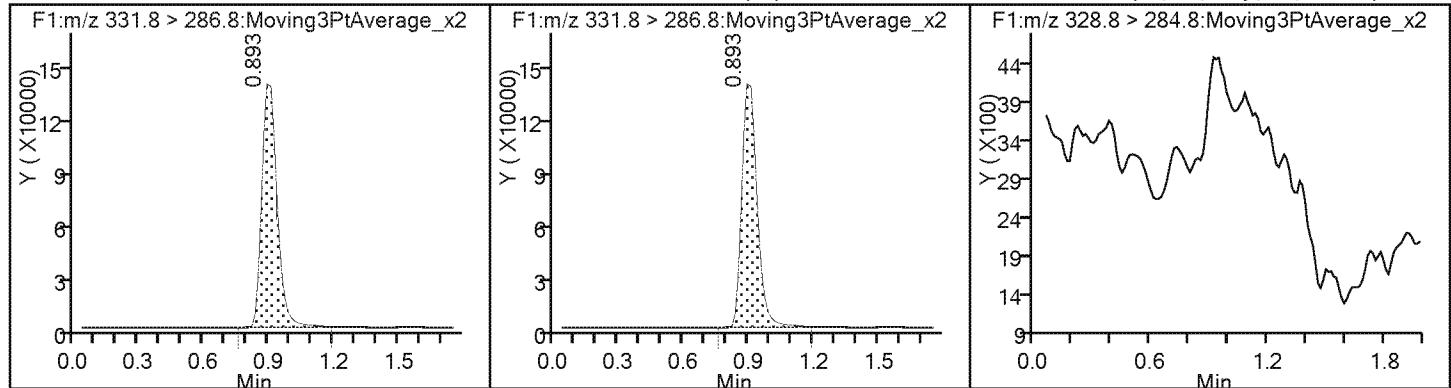
TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21022.d
Injection Date: 21-Feb-2018 08:41:09 Instrument ID: LC_LCMS7
Lims ID: 280-106447-A-12-A Lab Sample ID: 280-106447-12
Client ID: FAY-VES-FB-021418
Operator ID: JBH ALS Bottle#: 29 Worklist Smp#: 22
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: HFPO Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid (ND)



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21022.d
 Lims ID: 280-106447-A-12-A
 Client ID: FAY-VES-FB-021418
 Sample Type: Client
 Inject. Date: 21-Feb-2018 08:41:09 ALS Bottle#: 29 Worklist Smp#: 22
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 280-106447-A-12-A
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:42 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:48:15

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	8.43	84.33

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

Analy Batch No.: 404345

SDG No.: _____

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: _____ Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-404345/3	hfpo718B08034.d
Level 2	STD002 280-404345/4	hfpo718B08035.d
Level 3	STD003 280-404345/5	hfpo718B08036.d
Level 4	STD004 280-404345/6	hfpo718B08037.d
Level 5	STD005 280-404345/7	hfpo718B08038.d
Level 6	STD006 280-404345/8	hfpo718B08039.d
Level 7	STD007 280-404345/9	hfpo718B08040.d
Level 8	STD008 280-404345/10	hfpo718B08041.d
Level 9	STD009 280-404345/11	hfpo718B08042.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8	LVL 9	RT WINDOW	AVG RT
HFPO-DA	1.056	1.056	1.056	1.056	1.056	1.056	1.056	1.056	1.056	0.556 - 1.556	1.056
13C3 HFPO-DA	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.056	1.056	0.545 - 1.545	1.045

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

Analy Batch No.: 404345

SDG No.:

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-404345/3	hfpo718B08034.d
Level 2	STD002 280-404345/4	hfpo718B08035.d
Level 3	STD003 280-404345/5	hfpo718B08036.d
Level 4	STD004 280-404345/6	hfpo718B08037.d
Level 5	STD005 280-404345/7	hfpo718B08038.d
Level 6	STD006 280-404345/8	hfpo718B08039.d
Level 7	STD007 280-404345/9	hfpo718B08040.d
Level 8	STD008 280-404345/10	hfpo718B08041.d
Level 9	STD009 280-404345/11	hfpo718B08042.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4		B	M1	M2								
13C3 HFPO-DA	75771 75244 71284	75964 75940	72010 75039	77000 73687	Ave		74659.8778				2.6		30.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 280-106447-1 Analy Batch No.: 404345

SDG No.: _____

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: _____ Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
HFPO-DA	1.1630 1.1128	1.1250 1.0911	1.0756 1.0665	1.0527 1.0507	1.1211	Lin1	0.0361	1.0638							1.0000		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-106447-1 Analy Batch No.: 404345

SDG No.: _____

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: _____ Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-404345/3	hfpo718B08034.d
Level 2	STD002 280-404345/4	hfpo718B08035.d
Level 3	STD003 280-404345/5	hfpo718B08036.d
Level 4	STD004 280-404345/6	hfpo718B08037.d
Level 5	STD005 280-404345/7	hfpo718B08038.d
Level 6	STD006 280-404345/8	hfpo718B08039.d
Level 7	STD007 280-404345/9	hfpo718B08040.d
Level 8	STD008 280-404345/10	hfpo718B08041.d
Level 9	STD009 280-404345/11	hfpo718B08042.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5
13C3 HFPO-DA	Ave	757714 759397	759642 750388	720099 736869	769995 712841	752444	10.0 10.0	10.0 10.0	10.0 10.0	10.0 10.0	10.0

Curve Type Legend:

Ave = Average

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-106447-1 Analy Batch No.: 404345

SDG No.: _____

Instrument ID: LC_LCMS7 GC Column: Synergi Hyd ID: _____ Heated Purge: (Y/N) N

Calibration Start Date: 02/08/2018 13:05 Calibration End Date: 02/08/2018 13:31 Calibration ID: 31612

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD001 280-404345/3	hfpo718B08034.d
Level 2	STD002 280-404345/4	hfpo718B08035.d
Level 3	STD003 280-404345/5	hfpo718B08036.d
Level 4	STD004 280-404345/6	hfpo718B08037.d
Level 5	STD005 280-404345/7	hfpo718B08038.d
Level 6	STD006 280-404345/8	hfpo718B08039.d
Level 7	STD007 280-404345/9	hfpo718B08040.d
Level 8	STD008 280-404345/10	hfpo718B08041.d
Level 9	STD009 280-404345/11	hfpo718B08042.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5
HFPO-DA	13CP ODA	Lin1	22031 845082	42730 2046873	77455 3929397	162117 7489478	421775	0.250 10.0	0.500 25.0	1.00 50.0	2.00 100	5.00

Curve Type Legend:

Lin1 = Linear 1/conc ISTD

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08034.d
 Lims ID: std001
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 08-Feb-2018 13:05:38 ALS Bottle#: 2 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: L1
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:13 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:04

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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* 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 1.042 1.045 -0.003 757714 10.0 1562
 \$ 3 13C3 HFPO-DA
 331.8 > 286.8 1.042 1.045 -0.003 1.000 757714 10.1 1562
 1 Perfluoro(2-propoxypropanoic) acid M
 328.8 > 284.8 1.056 1.056 0.0 1.000 22031 0.2394 4.4 M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

HFPO_CAL-1_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfpo718B08034.d

Injection Date: 08-Feb-2018 13:05:38

Instrument ID: LC_LCMS7

Lims ID: std001

Client ID:

Operator ID: JBH

ALS Bottle#: 2 Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

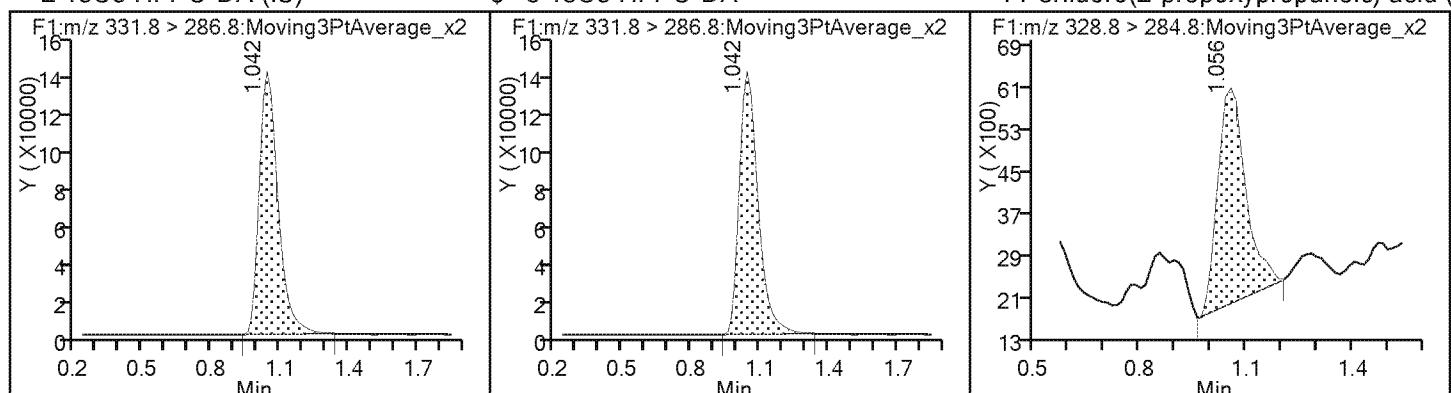
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid (M)



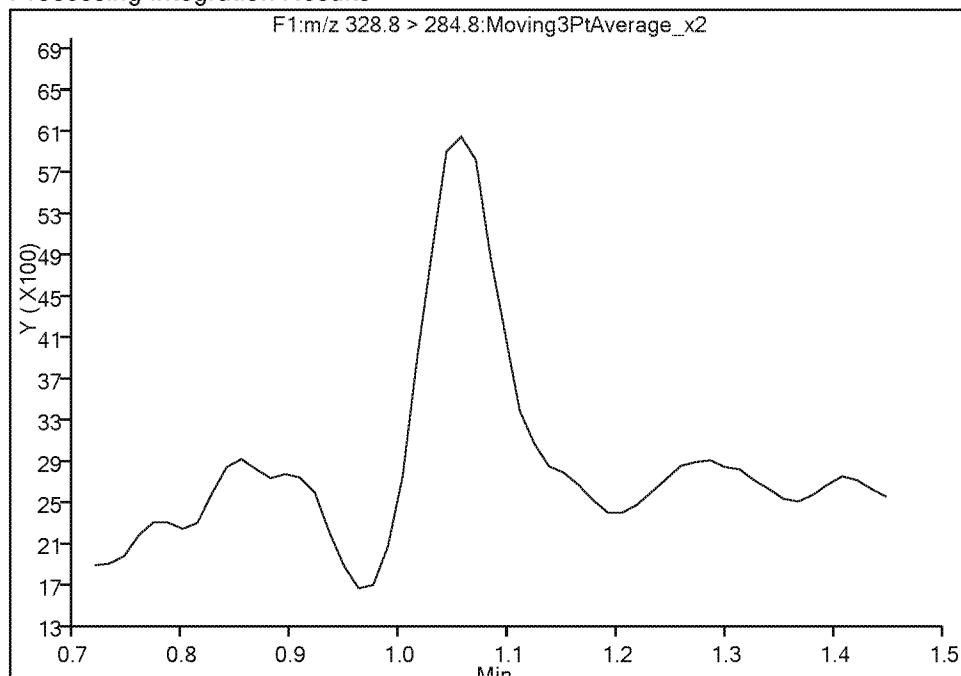
TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfpo718B08034.d
 Injection Date: 08-Feb-2018 13:05:38 Instrument ID: LC_LCMS7
 Lims ID: std001
 Client ID:
 Operator ID: JBH ALS Bottle#: 2 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Method: HFPO Limit Group: LC - 8321A_HFPO_Du
 Column: Detector F1:MRM

1 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6
 Signal: 1

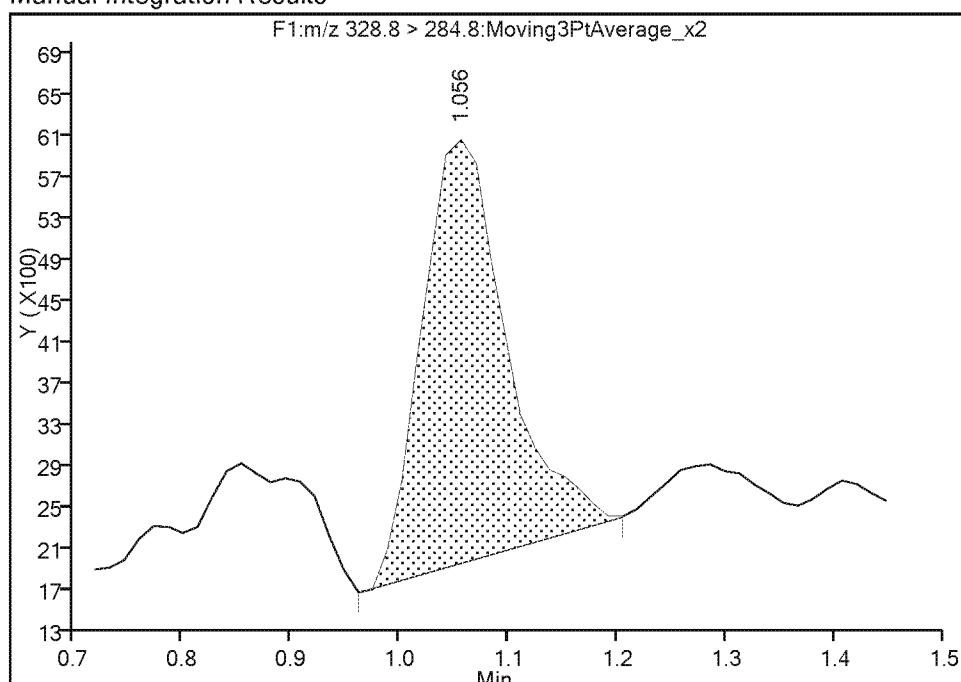
Not Detected
 Expected RT: 1.06

Processing Integration Results



RT: 1.06
 Area: 22031
 Amount: 0.239356
 Amount Units: ug/l

Manual Integration Results



Reviewer: meyera, 08-Feb-2018 15:19:01

Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08035.d
 Lims ID: std002
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 08-Feb-2018 13:08:52 ALS Bottle#: 3 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: L2
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:14 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 1.042 1.045 -0.003 1.000 759642 10.2 1267
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 1.042 1.045 -0.003 1.000 759642 10.0 1267
 1 Perfluoro(2-propoxypropanoic) acid M
 328.8 > 284.8 1.056 1.056 0.0 1.000 42730 0.4948 6.5 M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

HFPO_CAL-2_00033 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfp0718B08035.d

Injection Date: 08-Feb-2018 13:08:52 Instrument ID: LC_LCMS7

Lims ID: std002

Client ID:

Operator ID: JBH ALS Bottle#: 3 Worklist Smp#: 4

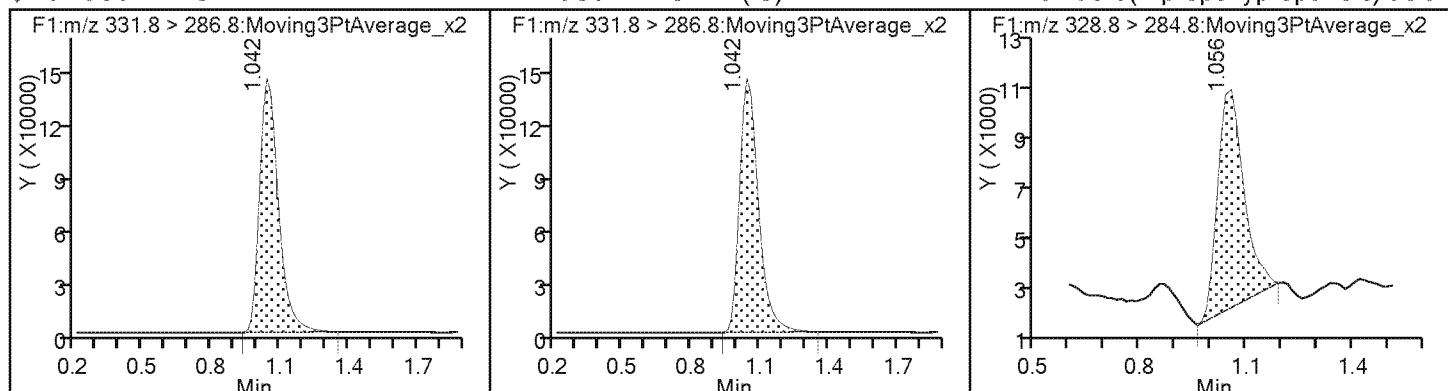
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid (M)



TestAmerica Denver

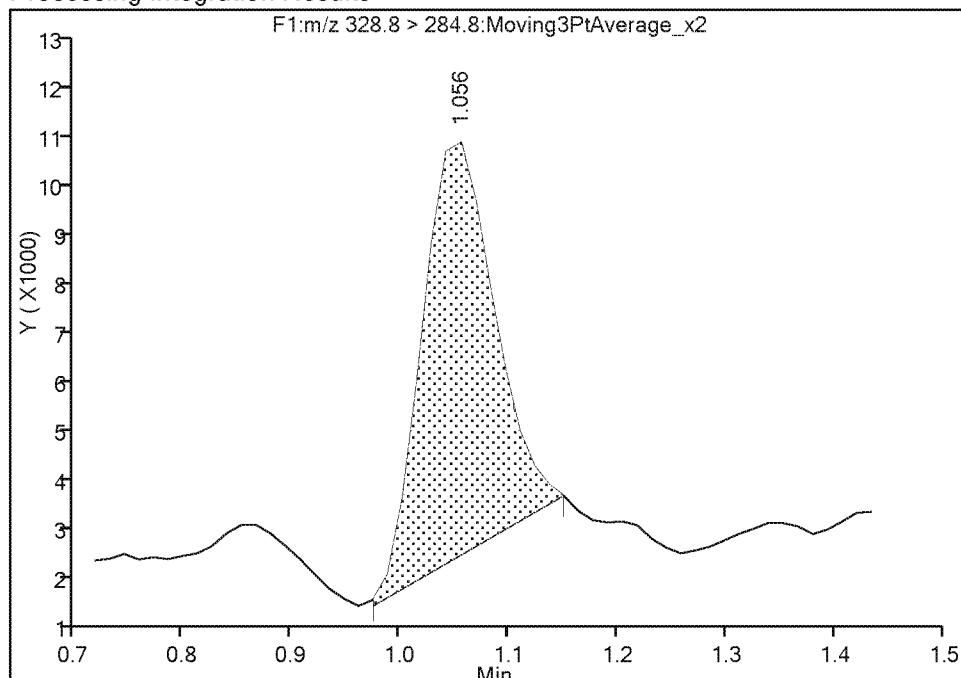
Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfpo718B08035.d
 Injection Date: 08-Feb-2018 13:08:52 Instrument ID: LC_LCMS7
 Lims ID: std002
 Client ID:
 Operator ID: JBH ALS Bottle#: 3 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Method: HFPO Limit Group: LC - 8321A_HFPO_Du
 Column: Detector F1:MRM

1 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

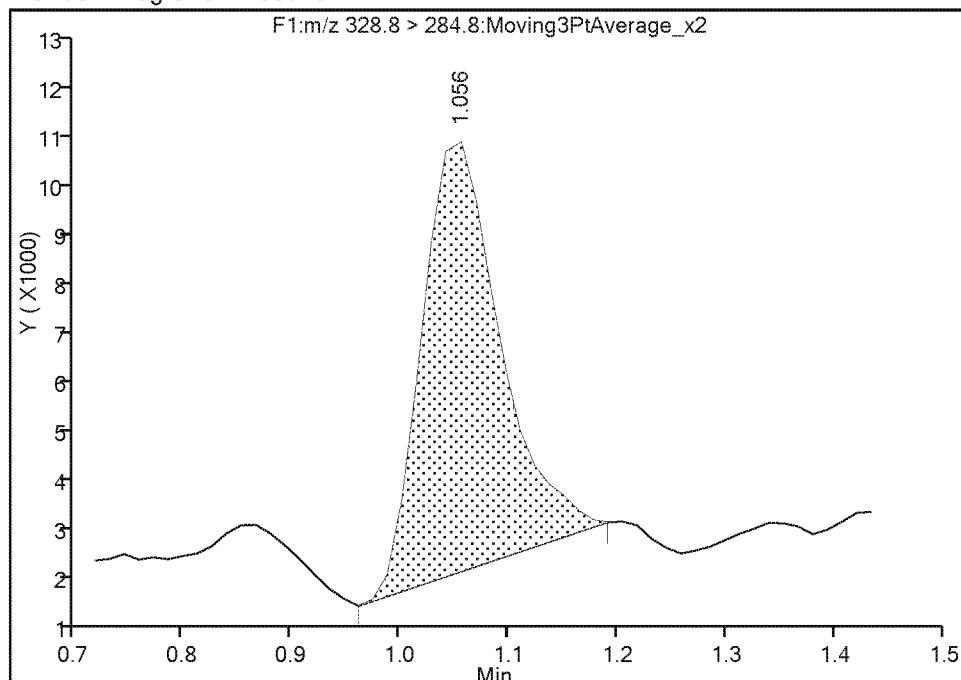
Processing Integration Results

RT: 1.06
 Area: 38092
 Amount: 0.452274
 Amount Units: ug/l



Manual Integration Results

RT: 1.06
 Area: 42730
 Amount: 0.494804
 Amount Units: ug/l



Reviewer: meyera, 08-Feb-2018 15:19:12

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08036.d
 Lims ID: std003
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 08-Feb-2018 13:12:06 ALS Bottle#: 4 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: L3
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:14 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d
 Column 1 : Det: F1:MRM
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

* 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 1.042 1.045 -0.003 720099 10.0 956
 \$ 3 13C3 HFPO-DA
 331.8 > 286.8 1.042 1.045 -0.003 1.000 720099 9.65 956
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 1.056 1.056 0.0 1.000 77455 0.9771 10.6

Reagents:

HFPO_CAL-3_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfpo718B08036.d

Injection Date: 08-Feb-2018 13:12:06

Instrument ID: LC_LCMS7

Lims ID: std003

Client ID:

Operator ID: JBH

ALS Bottle#: 4 Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

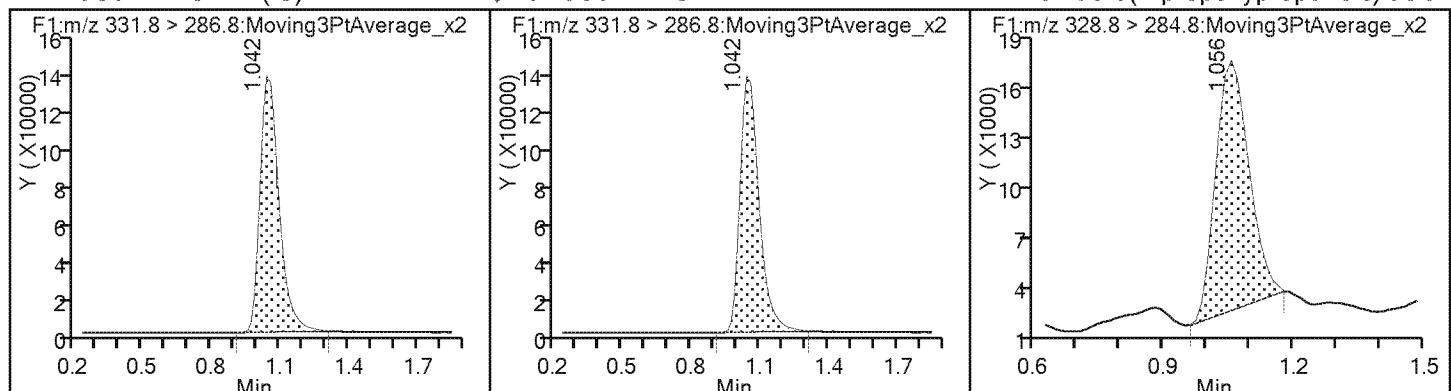
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08037.d
 Lims ID: std004
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 08-Feb-2018 13:15:21 ALS Bottle#: 5 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: L4
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:15 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 1.042 1.045 -0.003 1.000 769995 10.3 1154
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 1.042 1.045 -0.003 1.000 769995 10.0 1154
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 1.056 1.056 0.0 1.000 162117 1.95 26.1

Reagents:

HFPO_CAL-4_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfpo718B08037.d

Injection Date: 08-Feb-2018 13:15:21

Instrument ID: LC_LCMS7

Lims ID: std004

Client ID:

Operator ID: JBH

ALS Bottle#: 5 Worklist Smp#: 6

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

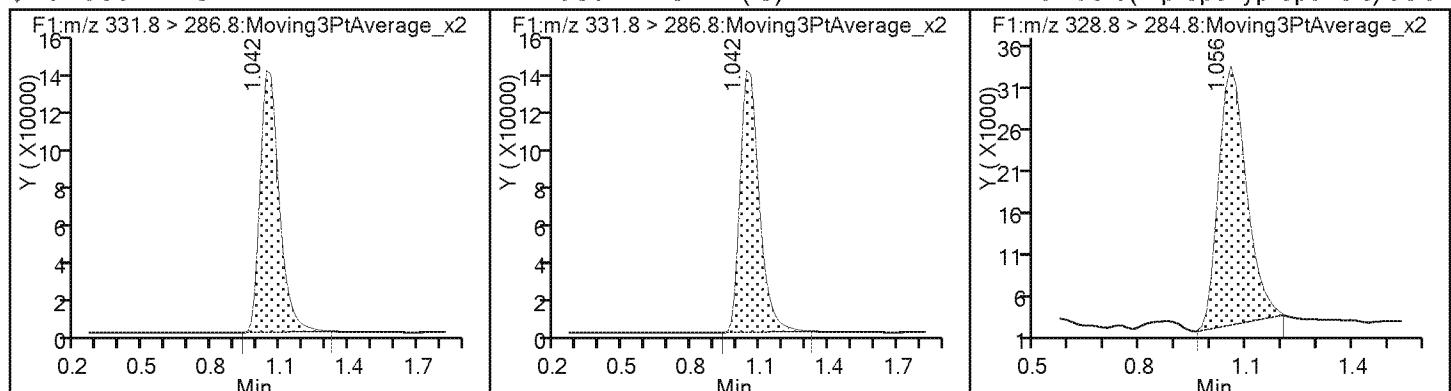
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08038.d
 Lims ID: std005
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 08-Feb-2018 13:18:35 ALS Bottle#: 6 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: L5
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:15 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

* 2 13C3 HFPO-DA (IS)

331.8 > 286.8 1.042 1.045 -0.003 752444 10.0 1072

\$ 3 13C3 HFPO-DA

331.8 > 286.8 1.042 1.045 -0.003 1.000 752444 10.1 1072

1 Perfluoro(2-propoxypropanoic) acid

328.8 > 284.8 1.056 1.056 0.0 1.000 421775 5.24 66.0

Reagents:

HFPO_CAL-5_00080 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfp0718B08038.d

Injection Date: 08-Feb-2018 13:18:35 Instrument ID: LC_LCMS7

Lims ID: std005

Client ID:

Operator ID: JBH ALS Bottle#: 6 Worklist Smp#: 7

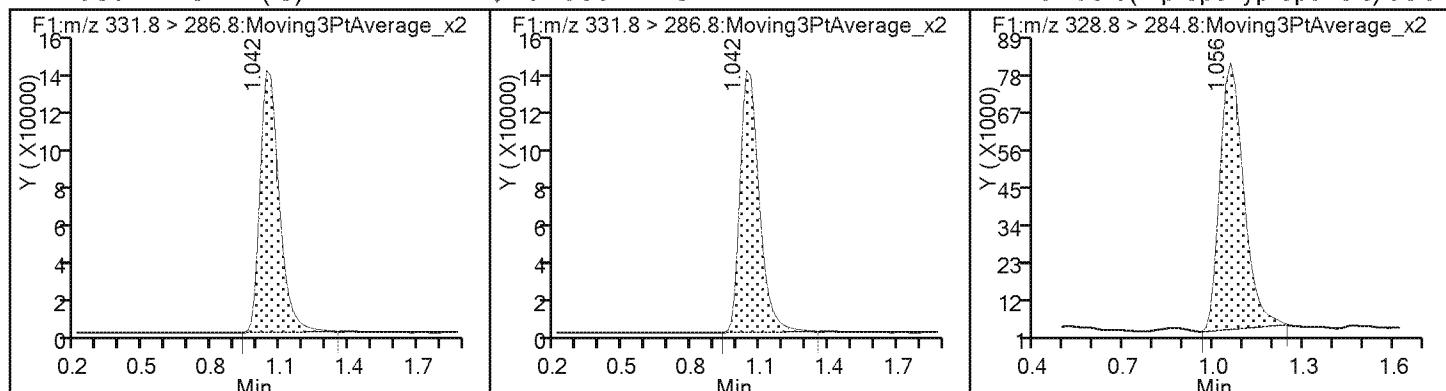
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08039.d
 Lims ID: std006
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 08-Feb-2018 13:21:49 ALS Bottle#: 7 Worklist Smp#: 8
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: L6
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:16 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:26

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 1.042 1.045 -0.003 1.000 759397 10.2 1193
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 1.042 1.045 -0.003 1.000 759397 10.0 1193
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 1.056 1.056 0.0 1.000 845082 10.4 146

Reagents:

HFPO_CAL-6_00080 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfpo718B08039.d

Injection Date: 08-Feb-2018 13:21:49

Instrument ID: LC_LCMS7

Lims ID: std006

Client ID:

Operator ID: JBH

ALS Bottle#: 7 Worklist Smp#: 8

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

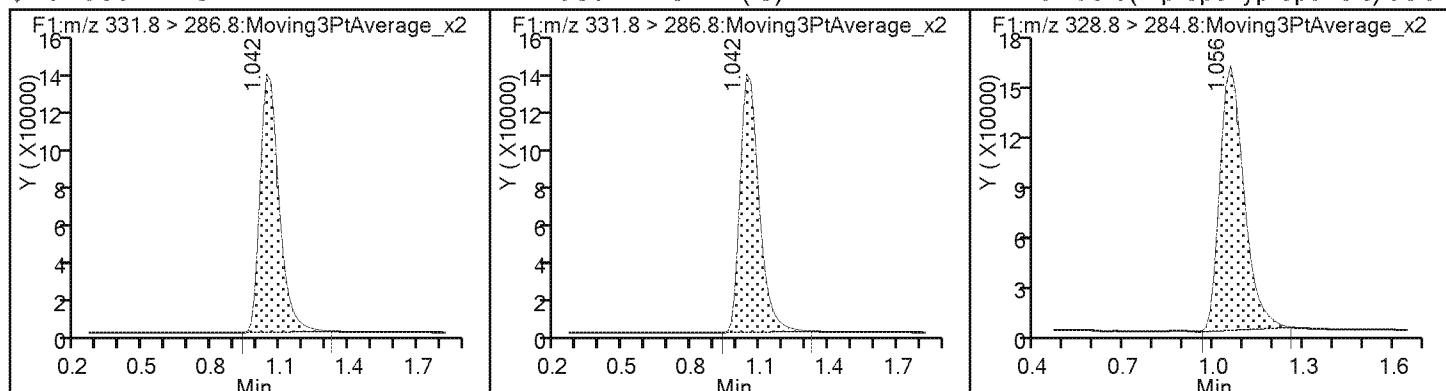
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08040.d
 Lims ID: std007
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 08-Feb-2018 13:25:03 ALS Bottle#: 8 Worklist Smp#: 9
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: L7
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:16 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

* 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 1.042 1.045 -0.003 750388 10.0 1247
 \$ 3 13C3 HFPO-DA
 331.8 > 286.8 1.042 1.045 -0.003 1.000 750388 10.1 1247
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 1.056 1.056 0.0 1.000 2046873 25.6 246

Reagents:

HFPO_CAL-7_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfpo718B08040.d

Injection Date: 08-Feb-2018 13:25:03

Instrument ID: LC_LCMS7

Lims ID: std007

Client ID:

Operator ID: JBH

ALS Bottle#: 8 Worklist Smp#: 9

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

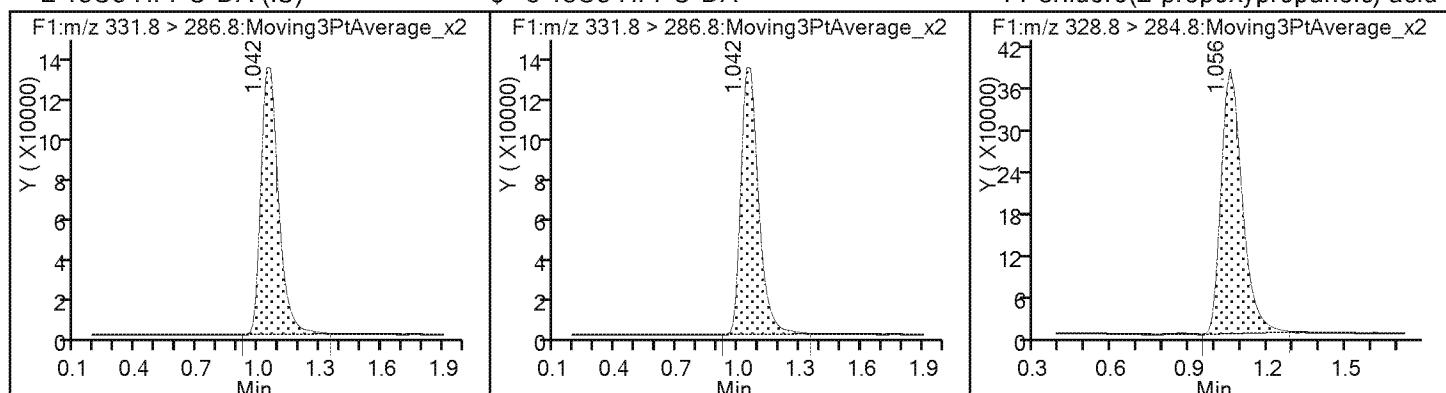
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08041.d
 Lims ID: std008
 Client ID:
 Sample Type: IC Calib Level: 8
 Inject. Date: 08-Feb-2018 13:28:18 ALS Bottle#: 9 Worklist Smp#: 10
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: L8
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:17 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:30

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 1.056 1.045 0.011 1.000 736869 9.87 1055
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 1.056 1.045 0.011 1.000 736869 10.0 1055
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 1.056 1.056 0.0 1.000 3929397 50.1 416

Reagents:

HFPO_CAL-8_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfpo718B08041.d

Injection Date: 08-Feb-2018 13:28:18

Instrument ID: LC_LCMS7

Lims ID: std008

Client ID:

Operator ID: JBH

ALS Bottle#: 9 Worklist Smp#: 10

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

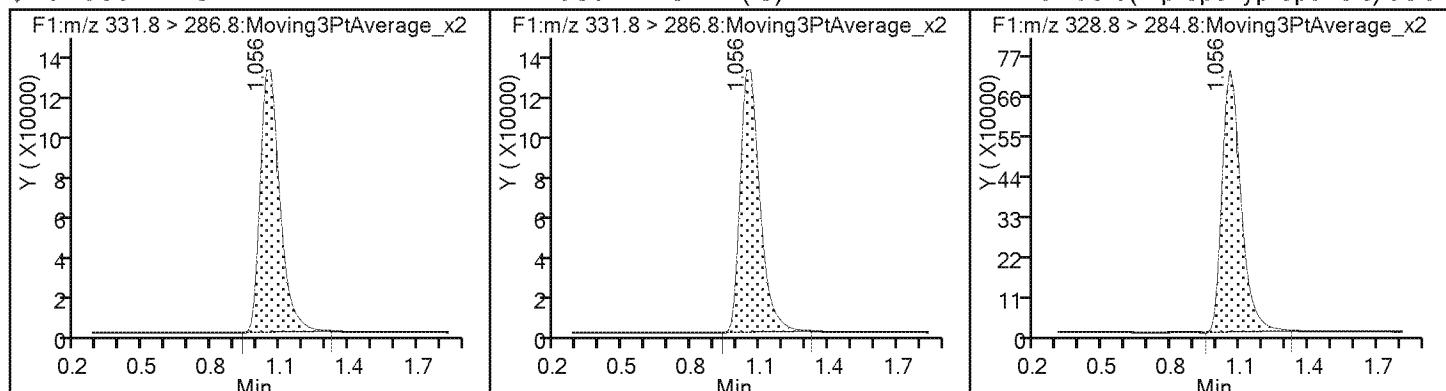
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d
 Lims ID: std009
 Client ID:
 Sample Type: IC Calib Level: 9
 Inject. Date: 08-Feb-2018 13:31:32 ALS Bottle#: 10 Worklist Smp#: 11
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: L9
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:17 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

* 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 1.056 1.045 0.011 712841 10.0 1141
 \$ 3 13C3 HFPO-DA
 331.8 > 286.8 1.056 1.045 0.011 1.000 712841 9.55 1141
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 1.056 1.056 0.0 1.000 7489478 98.7 561

Reagents:

HFPO_CAL-9_00001 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfp0718B08042.d

Injection Date: 08-Feb-2018 13:31:32

Instrument ID: LC_LCMS7

Lims ID: std009

Client ID:

Operator ID: JBH

ALS Bottle#: 10 Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

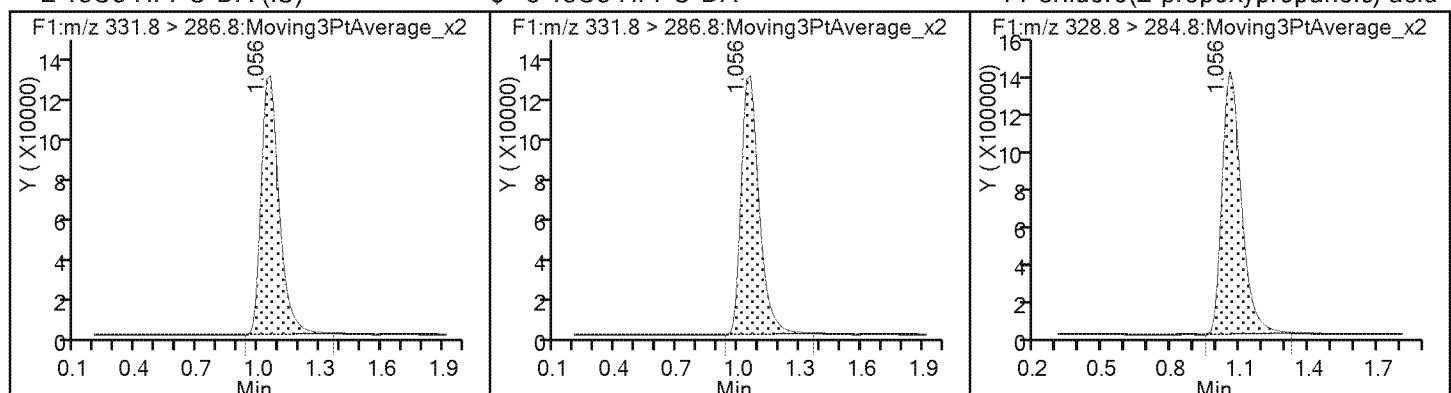
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

* 2 13C3 HFPO-DA (IS)

\$ 3 13C3 HFPO-DA

1 Perfluoro(2-propoxypropanoic) acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Lab Sample ID: ICV 280-404345/14

Calibration Date: 02/08/2018 13:41

Instrument ID: LC LCMS7

Calib Start Date: 02/08/2018 13:05

GC Column: Synergi Hydro ID:

Calib End Date: 02/08/2018 13:31

Lab File ID: hfpo718B08045.d

Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.139		2.05	1.95	5.3	20.0
13C3 HFPO-DA	Ave	74660	76733		10.3	10.0	2.8	

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08045.d
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 08-Feb-2018 13:41:16 ALS Bottle#: 11 Worklist Smp#: 14
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist:
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:19 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d
 Column 1 : Det: F1:MRM
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:20:35

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 1.056 1.045 0.011 1.000 767333 10.3 1367
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 1.056 1.045 0.011 1.000 767333 10.0 1367
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 1.056 1.056 0.0 1.000 170411 2.05 30.8

Reagents:

HFPO_ICV_00034 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfp0718B08045.d

Injection Date: 08-Feb-2018 13:41:16

Instrument ID: LC_LCMS7

Lims ID: ICV

Client ID:

Operator ID: JBH

ALS Bottle#: 11 Worklist Smp#: 14

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

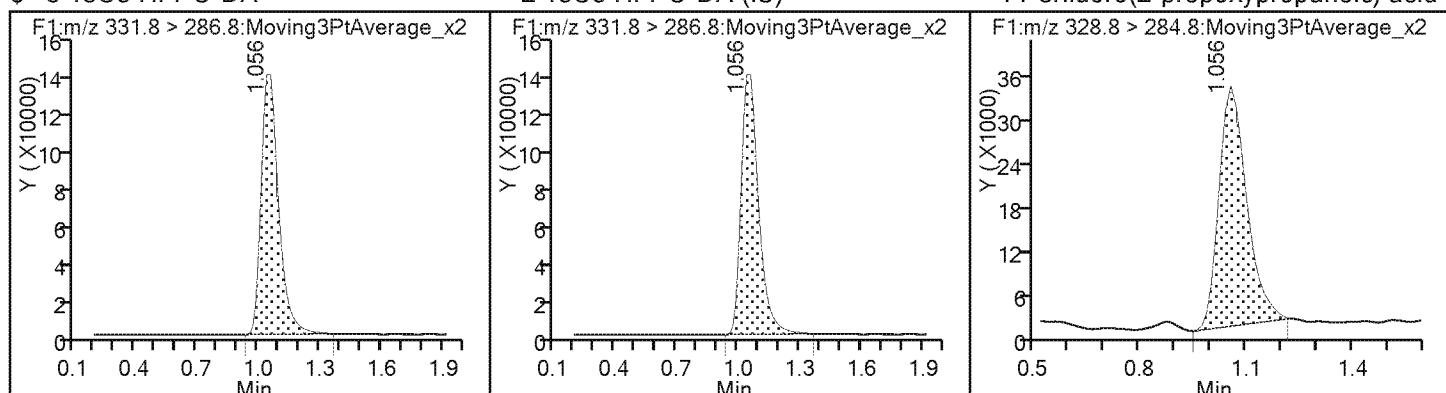
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Lab Sample ID: CCV 280-405660/3

Calibration Date: 02/21/2018 07:39

Instrument ID: LC LCMS7

Calib Start Date: 02/08/2018 13:05

GC Column: Synergi Hydro ID:

Calib End Date: 02/08/2018 13:31

Lab File ID: hfpo718B21003.d

Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.149		10.8	10.0	7.6	20.0
13C3 HFPO-DA	Ave	74660	54252		7.27	10.0	-27.3	

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21003.d
 Lims ID: CCV L6
 Client ID:
 Sample Type: CCV
 Inject. Date: 21-Feb-2018 07:39:24 ALS Bottle#: 7 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L6
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:36 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:41:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.988 1.045 -0.057 1.000 542515 7.27 1203
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.988 1.045 -0.057 1.000 542515 10.0 1203
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 1.002 1.056 -0.054 1.000 623175 10.8 141

Reagents:

HFPO_CAL-6_00081 Amount Added: 1.00 Units: mL

Report Date: 21-Feb-2018 10:06:36

Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21003.d

Injection Date: 21-Feb-2018 07:39:24

Instrument ID: LC_LCMS7

Lims ID: CCV L6

Client ID:

Operator ID: JBH

ALS Bottle#: 7 Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

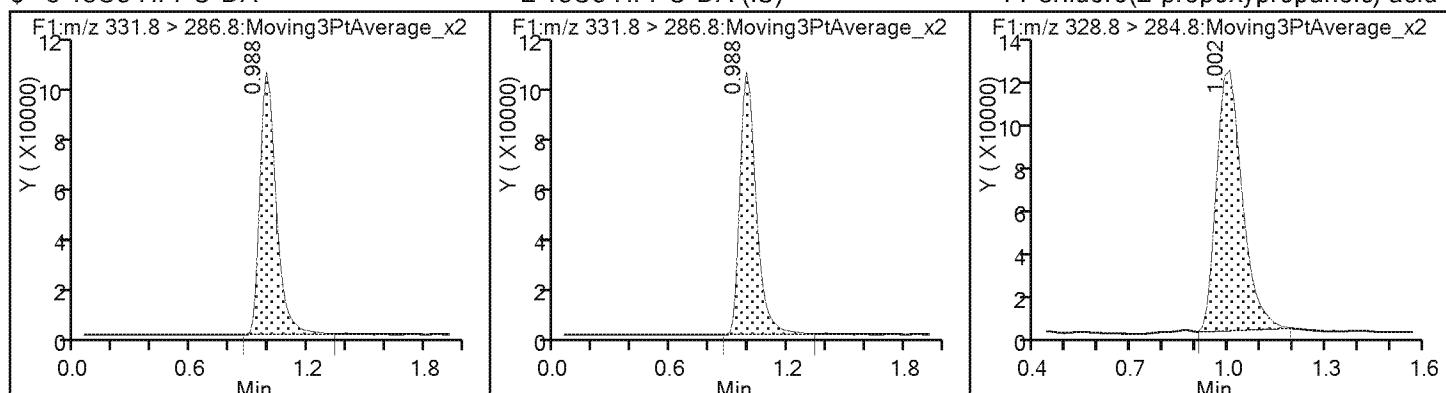
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Lab Sample ID: CCV 280-405660/14

Calibration Date: 02/21/2018 08:15

Instrument ID: LC LCMS7

Calib Start Date: 02/08/2018 13:05

GC Column: Synergi Hydro ID:

Calib End Date: 02/08/2018 13:31

Lab File ID: hfpo718B21014.d

Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.236		5.78	5.00	15.5	20.0
13C3 HFPO-DA	Ave	74660	68983		9.24	10.0	-7.6	

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21014.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 21-Feb-2018 08:15:04 ALS Bottle#: 6 Worklist Smp#: 14
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:42 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d
 Column 1 : Det: F1:MRM
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:42:00

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.907 1.045 -0.138 1.000 689825 9.24 1042
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.907 1.045 -0.138 1.000 689825 10.0 1042
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.920 1.056 -0.136 1.000 426440 5.78 88.7

Reagents:

HFPO_CAL-5_00081 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21014.d

Injection Date: 21-Feb-2018 08:15:04

Instrument ID: LC_LCMS7

Lims ID: CCV L5

Client ID:

Operator ID: JBH

ALS Bottle#: 6 Worklist Smp#: 14

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

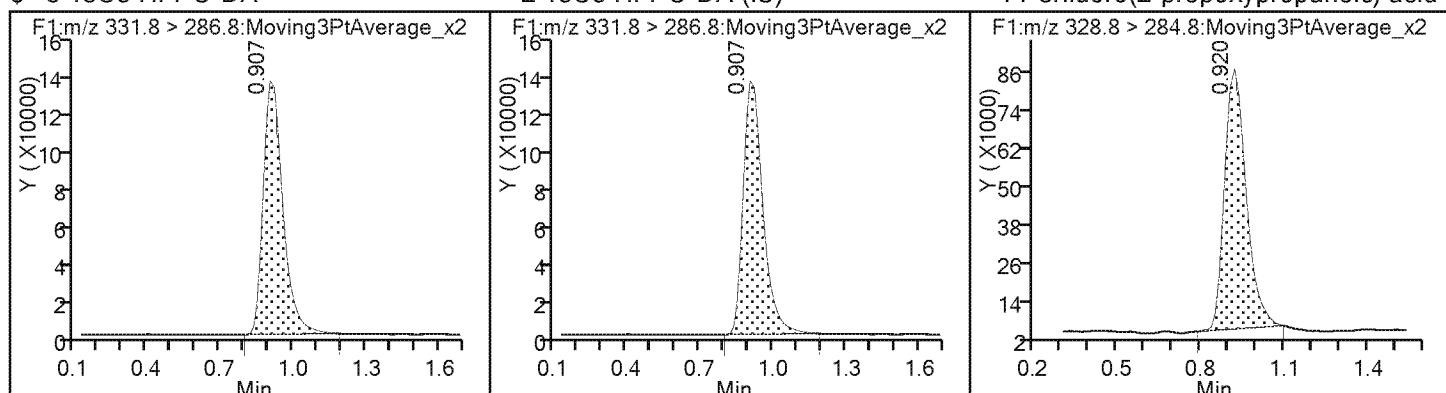
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Lab Sample ID: CCV 280-405660/24

Calibration Date: 02/21/2018 08:47

Instrument ID: LC LCMS7

Calib Start Date: 02/08/2018 13:05

GC Column: Synergi Hydro ID:

Calib End Date: 02/08/2018 13:31

Lab File ID: hfpo718B21024.d

Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.207		11.3	10.0	13.2	20.0
13C3 HFPO-DA	Ave	74660	70592		9.46	10.0	-5.4	

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21024.d
 Lims ID: CCV L6
 Client ID:
 Sample Type: CCV
 Inject. Date: 21-Feb-2018 08:47:41 ALS Bottle#: 7 Worklist Smp#: 24
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L6
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:48:26

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.907 1.045 -0.138 1.000 705920 9.46 1134
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.907 1.045 -0.138 1.000 705920 10.0 1134
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.920 1.056 -0.136 1.000 852326 11.3 121

Reagents:

HFPO_CAL-6_00081 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21024.d

Injection Date: 21-Feb-2018 08:47:41 Instrument ID: LC_LCMS7

Lims ID: CCV L6

Client ID:

Operator ID: JBH

ALS Bottle#: 7 Worklist Smp#: 24

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

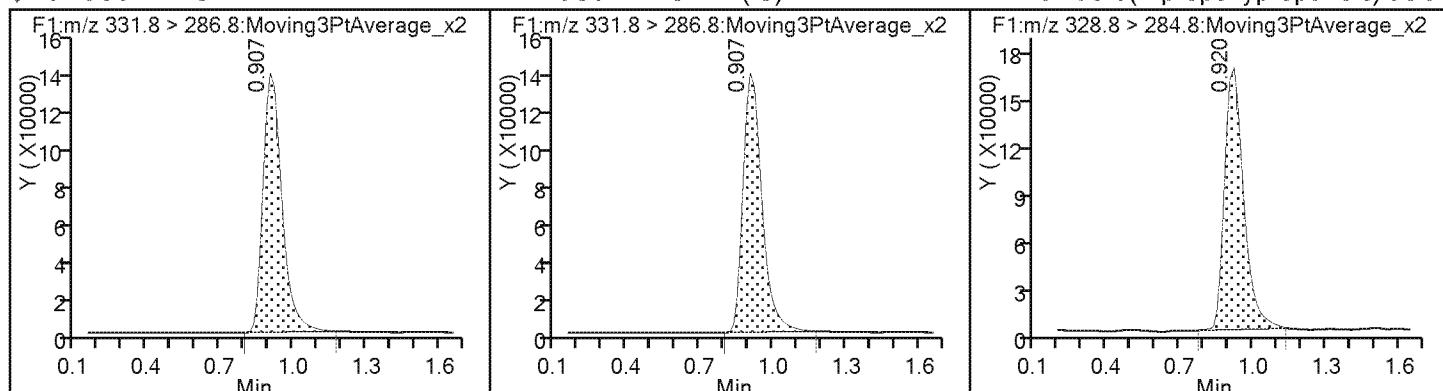
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Lab Sample ID: CCV 280-405660/35

Calibration Date: 02/21/2018 09:23

Instrument ID: LC LCMS7

Calib Start Date: 02/08/2018 13:05

GC Column: Synergi Hydro ID:

Calib End Date: 02/08/2018 13:31

Lab File ID: hfpo718B21035.d

Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.267		5.92	5.00	18.5	20.0
13C3 HFPO-DA	Ave	74660	73742		9.88	10.0	-1.2	

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21035.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 21-Feb-2018 09:23:39 ALS Bottle#: 6 Worklist Smp#: 35
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:53 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d
 Column 1 : Det: F1:MRM
 Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA

331.8 > 286.8 0.920 1.045 -0.125 1.000 737416 9.88 1546

* 2 13C3 HFPO-DA (IS)

331.8 > 286.8 0.920 1.045 -0.125 1.000 737416 10.0 1546

1 Perfluoro(2-propoxypropanoic) acid

328.8 > 284.8 0.920 1.056 -0.136 1.000 467269 5.92 88.5

Reagents:

HFPO_CAL-5_00081 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21035.d

Injection Date: 21-Feb-2018 09:23:39 Instrument ID: LC_LCMS7

Lims ID: CCV L5

Client ID:

Operator ID: JBH

ALS Bottle#: 6 Worklist Smp#: 35

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

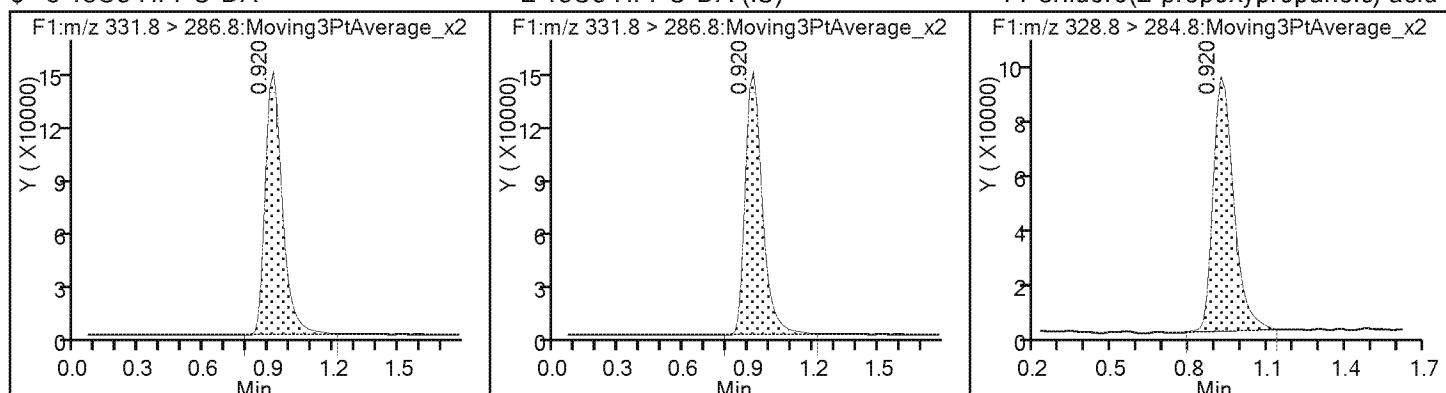
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Lab Sample ID: CCV 280-405660/38

Calibration Date: 02/21/2018 09:33

Instrument ID: LC LCMS7

Calib Start Date: 02/08/2018 13:05

GC Column: Synergi Hydro ID:

Calib End Date: 02/08/2018 13:31

Lab File ID: hfpo718B21038.d

Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HFPO-DA	Lin1		1.191		11.2	10.0	11.7	20.0
13C3 HFPO-DA	Ave	74660	73758		9.88	10.0	-1.2	

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21038.d
 Lims ID: CCV L6
 Client ID:
 Sample Type: CCV
 Inject. Date: 21-Feb-2018 09:33:28 ALS Bottle#: 7 Worklist Smp#: 38
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L6
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Sublist: chrom-HFPO*sub1

Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:55 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:06:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA

331.8 > 286.8 0.920 1.045 -0.125 1.000 737582 9.88 1710

* 2 13C3 HFPO-DA (IS)

331.8 > 286.8 0.920 1.045 -0.125 737582 10.0 1710

1 Perfluoro(2-propoxypropanoic) acid

328.8 > 284.8 0.920 1.056 -0.136 1.000 878758 11.2 162

Reagents:

HFPO_CAL-6_00081 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21038.d

Injection Date: 21-Feb-2018 09:33:28 Instrument ID: LC_LCMS7

Lims ID: CCV L6

Client ID:

Operator ID: JBH

ALS Bottle#: 7 Worklist Smp#: 38

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

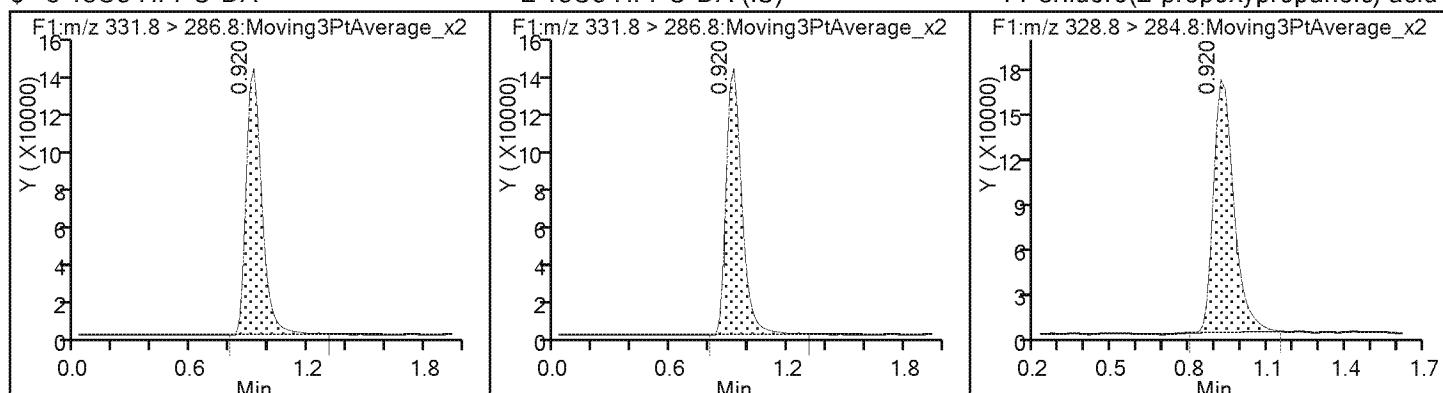
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

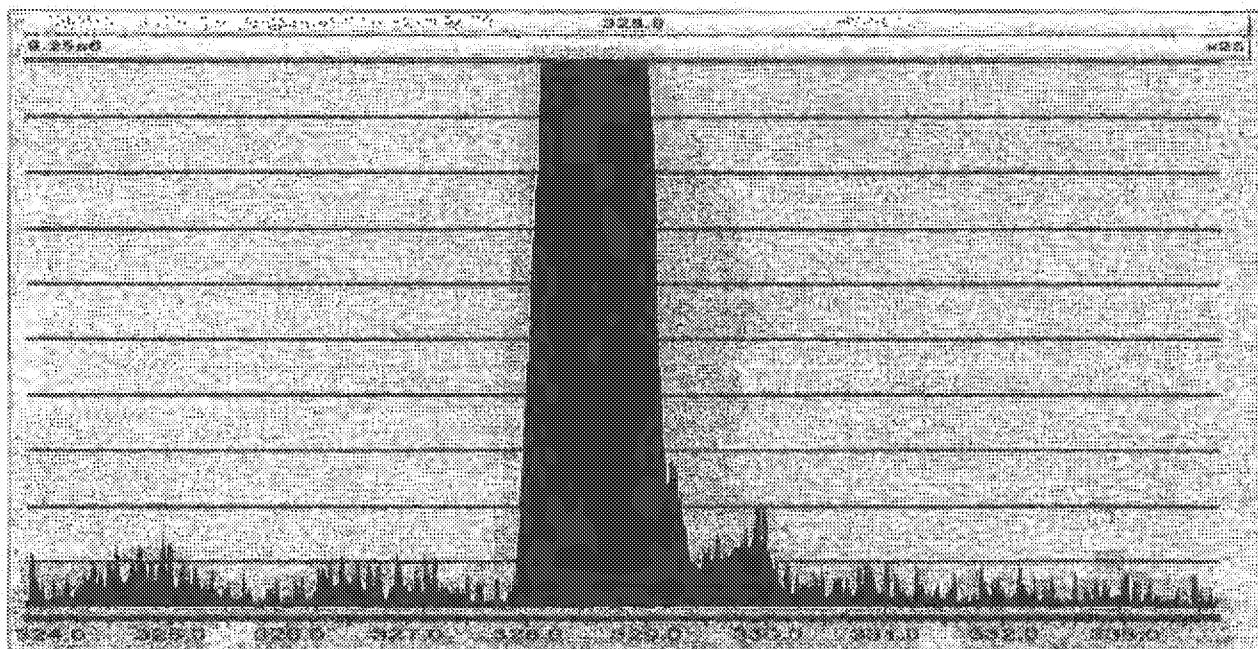
1 Perfluoro(2-propoxypropanoic) acid



File: C:\MassLynx\8321.PROVACQUDBHFPOMRM.lpr

Instrument: XEVO-TQMS\IVBA463

Printed: Wednesday, February 21, 2018 07:18:40 Mountain Standard Time



Type	Start Mass	End Mass	Set Mass
MS1 Scan	323.80	333.80	
Source (ES-)	Settings	Readbacks	
Capillary (kV)	0.50	0.53	
Cone (V)	10.00	-21.06	
Extractor (V)	3.00	-10.81	
Source Temperature (°C)	120	120	
Desolvation Temperature (°C)	200	200	
Cone Gas Flow (L/Hr)	50	49	
Desolvation Gas Flow (L/Hr)	800	794	
Collision Gas Flow (mL/Min)	0.15	0.04	
Analyser	Settings	Readbacks	
LM 1 Resolution	2.8		
HM 1 Resolution	14.8		
Ion Energy 1	0.7	0.7	
MS Mode Collision Energy	7.00		
MSMS Mode Collision Energy	20.00	20.00	
MS Mode Entrance	0.50		
MS Mode Exit	0.50		
Gas On MS Mode Entrance	0.50		
Gas On MS Mode Exit	0.50		
Gas On MSMS Mode Entrance	0.50		
Gas On MSMS Mode Exit	0.50		
Gas Off MS Mode Entrance	30.00		
Gas Off MS Mode Exit	30.00		
Gas Off MSMS Mode Entrance	2.00		
Gas Off MSMS Mode Exit	2.00		
ScanWave MS Mode Entrance	0.50		
ScanWave MS Mode Exit	0.50		
ScanWave MSMS Mode Entrance	0.50		
ScanWave MSMS Mode Exit	0.50		
LM 2 Resolution	2.9		
HM 2 Resolution	14.7		
Ion Energy 2	0.9		

File: C:\MassLynx\8321.PROVACQUDB\HFPOMRM.lpr

Instrument: XEVO-TQMS\WBA463

Printed: Wednesday, February 21, 2018 07:18:40 Mountain Standard Time

Multipler 523.81
Active Reservoir A

Pressure Gauges
Collision Cell Pressure (mbar) 7.878782e-005

Instrument Configuration**Automatic Mode**

MS Inter-scan delay (secs) 0.005
Polarity/Mode switch Inter-scan delay (secs) 0.020
Enhanced Inter-scan delay (secs) 0.020

Inter-channel delay - See Tables**MS 1 Delay Table:**

R delay
<= 0.500 0.005
<= 2.000 0.008
<= 4.000 0.010
<= 11.000 0.012
> 11.000 0.014

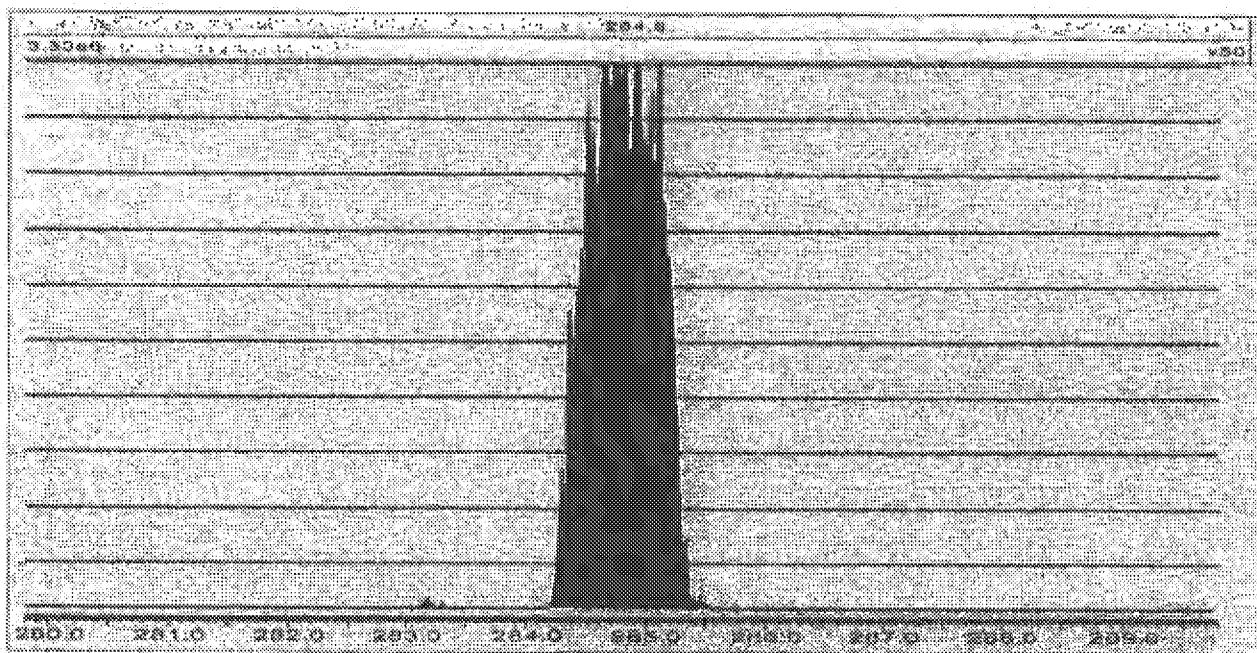
MS 2 Delay Table:
R delay
<= 8.000 0.005
<= 25.000 0.005
> 25.000 0.007

(in seconds)
q/22.413

File: C:\MassLynx\6321.PRO\ACQUDB\HFPO\RM.lpr

Instrument: XEVO-TQMS\PBA463

Printed: Wednesday, February 21, 2018 07:19:13 Mountain Standard Time



Type	Start Mass	End Mass	Set Mass
Daughter Scan	279.80	289.80	328.80

Source (ES-)	Settings	Readbacks
Capillary (kV)	0.60	0.54
Cone (V)	10.00	-21.06
Extractor (V)	3.00	10.61
Source Temperature (°C)	120	120
Desolvation Temperature (°C)	200	200
Cone Gas Flow (L/Hr)	50	49
Desolvation Gas Flow (L/Hr)	800	782
Collision Gas Flow (mL/Min)	0.15	0.14

Analyser	Settings	Readbacks
LM 1 Resolution	2.8	
HM 1 Resolution	14.8	
Ion Energy 1	0.7	
MS Mode Collision Energy	7.00	Chidaprom
MSMS Mode Collision Energy	20.00	2422/%
MS Mode Entrance	0.60	
MS Mode Exit	0.50	
Gas On MS Mode Entrance	0.50	
Gas On MS Mode Exit	0.50	
Gas On MSMS Mode Entrance	0.50	
Gas On MSMS Mode Exit	0.50	
Gas Off MS Mode Entrance	30.00	
Gas Off MS Mode Exit	30.00	
Gas Off MSMS Mode Entrance	2.00	
Gas Off MSMS Mode Exit	2.00	
ScanWave MS Mode Entrance	0.50	
ScanWave MS Mode Exit	0.50	
ScanWave MSMS Mode Entrance	0.50	
ScanWave MSMS Mode Exit	0.50	
LM 2 Resolution	2.9	
HM 2 Resolution	14.7	
Ion Energy 2	0.3	

File: C:\MassLynx\8321.PROVACQUDBHFPOMRM.lpr

Instrument: XEVO-TQMS\VBAA53

Printed: Wednesday, February 21, 2018 07:19:13 Mountain Standard Time

Multiplexer 623.61
Active Reservoir A

Pressure Gauges
Collision Cell Pressure (mbar) 1.105268e-003

Instrument Configuration**Automatic Mode**

MS Inter-scan delay (secs) 0.005
Polarity/Mode switch Inter-scan delay (secs) 0.020
Enhanced Inter-scan delay (secs) 0.020

Inter-channel delay - See Tables**MS 1 Delay Table:**

R delay
≤ 0.500 0.005
≤ 2.000 0.008
≤ 4.000 0.010
≤ 11.000 0.012
> 11.000 0.014

On/Off POM
2 hz/1s

MS 2 Delay Table:

R delay
≤ 8.000 0.005
≤ 25.000 0.006
> 25.000 0.007

File: c:\masslynx\8321.pro\acquidb\hfpo.exp

Printed: Wednesday, February 21, 2018 07:19:38 Mountain Standard Time

Creation Time	Fri 18 Nov 2016 09:08:40
Instrument Identifier	XEVO-TQMS\IVBA453
Version Number	1.0
Duration (min)	2.0
Calibration Filename	C:\MassLynx\IntelliStart\Results\Unit Mass Resolution\Calibration_20100811_2.cal
Solvent Delay Divert Valve Enabled	0
Number Of Functions	1

Function 1 : MRM of 2 mass pairs, Time 0.00 to 2.00, ES-

Type	MRM
Ion Mode	ES-
Inter Channel Delay (sec)	-1.000
InterScan Time (sec)	-1.000
Span (Da)	0.5
Start Time (min)	0.0
End Time (min)	2.0

Ch	Exmt(Da)	Dau(Da)	Dwell(s)	Cone(V)	Coll(eV)	Delay(s)	Compound
1	328.80	284.80	0.400	10.00	7.00	-1.000	HFPO
2	331.80	286.80	0.400	10.00	7.00	-1.000	HFPO 18

John P. M.
2/22/18.

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1
SDG No.:
Client Sample ID: Lab Sample ID: MB 280-405473/1-A
Matrix: Water Lab File ID: hfpo718B21004.d
Analysis Method: 8321A Date Collected:
Extraction Method: 3535 Date Extracted: 02/20/2018 10:22
Sample wt/vol: 250 (mL) Date Analyzed: 02/21/2018 07:42
Con. Extract Vol.: 5 (mL) Dilution Factor: 1
Injection Volume: 20 (uL) GC Column: Synergi Hydro ID:
% Moisture: GPC Cleanup: (Y/N) N
Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	<0.010		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	77		50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21004.d
 Lims ID: MB 280-405473/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 21-Feb-2018 07:42:37 ALS Bottle#: 12 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: MB280-405473/1-A
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:36 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:41:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.975 1.045 -0.070 1.000 576167 7.72 1749
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.975 1.045 -0.070 576167 10.0 1749

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21004.d

Injection Date: 21-Feb-2018 07:42:37 Instrument ID: LC_LCMS7

Lims ID: MB 280-405473/1-A

Client ID:

Operator ID: JBH

ALS Bottle#: 12 Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

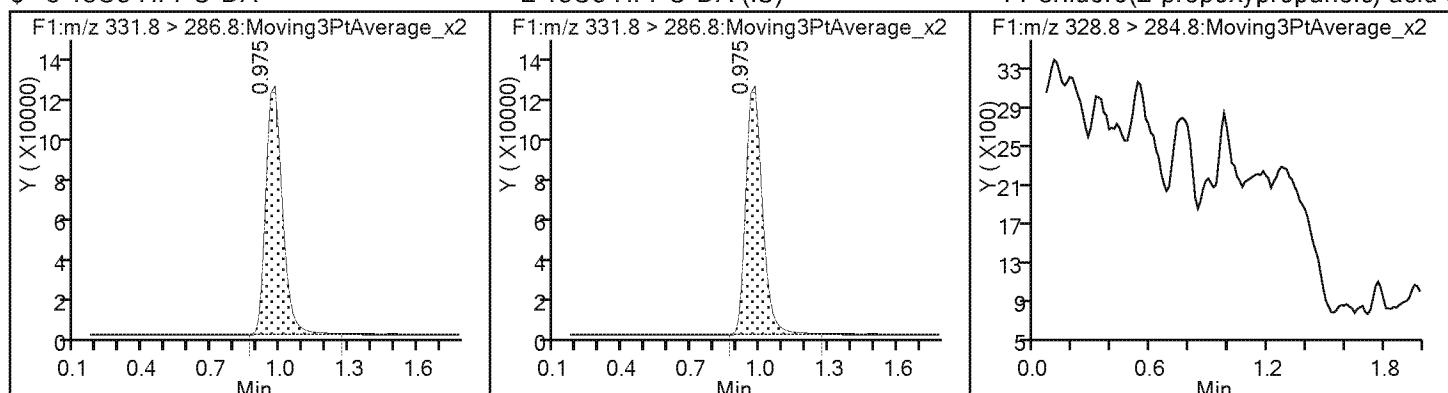
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid (ND)



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21004.d
 Lims ID: MB 280-405473/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 21-Feb-2018 07:42:37 ALS Bottle#: 12 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: MB280-405473/1-A
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:36 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:41:15

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	7.72	77.17

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: ICB 280-404345/12

Matrix: Water Lab File ID: hfpo718B08043.d

Analysis Method: 8321A Date Collected: _____

Extraction Method: _____ Date Extracted: _____

Sample wt/vol: 1 (mL) Date Analyzed: 02/08/2018 13:34

Con. Extract Vol.: _____ Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 404345 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	<0.50		0.50	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	103		50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08043.d
 Lims ID: ICB
 Client ID:
 Sample Type: ICB
 Inject. Date: 08-Feb-2018 13:34:46 ALS Bottle#: 1 Worklist Smp#: 12
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: ICB
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:17 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
331.8 > 286.8 1.056 1.045 0.011 1.000 772269 10.3 1251

* 2 13C3 HFPO-DA (IS)
331.8 > 286.8 1.056 1.045 0.011 1.000 772269 10.0 1251

Reagents:

HFPO_CAL-0_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfpo718B08043.d

Injection Date: 08-Feb-2018 13:34:46

Instrument ID: LC_LCMS7

Lims ID: ICB

Client ID:

Operator ID: JBH

ALS Bottle#: 1 Worklist Smp#: 12

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

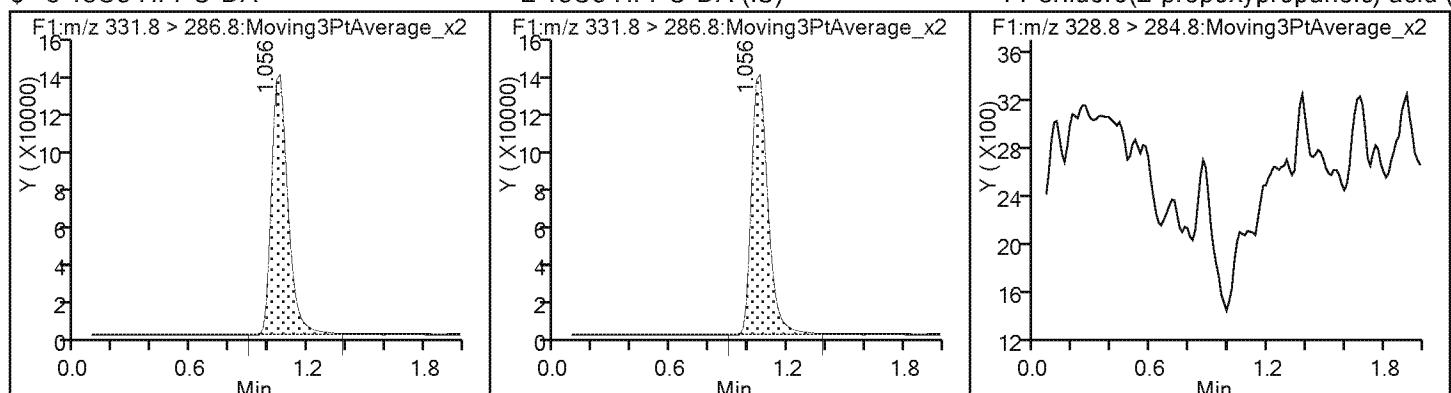
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid (ND)



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08043.d
 Lims ID: ICB
 Client ID:
 Sample Type: ICB
 Inject. Date: 08-Feb-2018 13:34:46 ALS Bottle#: 1 Worklist Smp#: 12
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: ICB
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:17 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:19:42

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	10.3	103.44

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: LCS 280-405473/2-A

Matrix: Water Lab File ID: hfpo718B21005.d

Analysis Method: 8321A Date Collected: _____

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 250 (mL) Date Analyzed: 02/21/2018 07:45

Con. Extract Vol.: 5 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	0.191		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	81		50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21005.d
 Lims ID: LCS 280-405473/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 21-Feb-2018 07:45:52 ALS Bottle#: 13 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: LCS280-405473/2-A
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:36 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:41:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.893 1.045 -0.152 1.000 604700 8.10 1420
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.893 1.045 -0.152 1.000 604700 10.0 1420
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.893 1.056 -0.163 1.000 616391 9.55 174

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21005.d

Injection Date: 21-Feb-2018 07:45:52 Instrument ID: LC_LCMS7

Lims ID: LCS 280-405473/2-A

Client ID:

Operator ID: JBH ALS Bottle#: 13 Worklist Smp#: 5

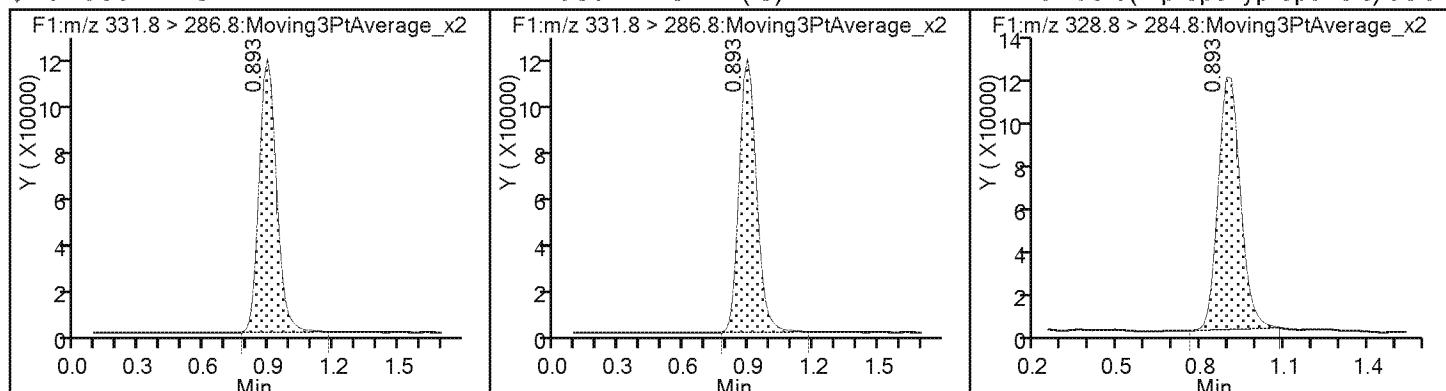
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21005.d
 Lims ID: LCS 280-405473/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 21-Feb-2018 07:45:52 ALS Bottle#: 13 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: LCS280-405473/2-A
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:36 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:41:18

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	8.10	80.99

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: LCSD 280-405473/4-A

Matrix: Water Lab File ID: hfpo718B21007.d

Analysis Method: 8321A Date Collected: _____

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 250 (mL) Date Analyzed: 02/21/2018 07:52

Con. Extract Vol.: 5 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	0.197		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	79		50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21007.d
 Lims ID: LCSD 280-405473/4-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 21-Feb-2018 07:52:21 ALS Bottle#: 15 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: LCSD280-405473/4-A
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:36 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:41:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.893 1.045 -0.152 1.000 589736 7.90 1509
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.893 1.045 -0.152 1.000 589736 10.0 1509
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.893 1.056 -0.163 1.000 620402 9.86 170

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21007.d

Injection Date: 21-Feb-2018 07:52:21 Instrument ID: LC_LCMS7

Lims ID: LCSD 280-405473/4-A

Client ID:

Operator ID: JBH ALS Bottle#: 15 Worklist Smp#: 7

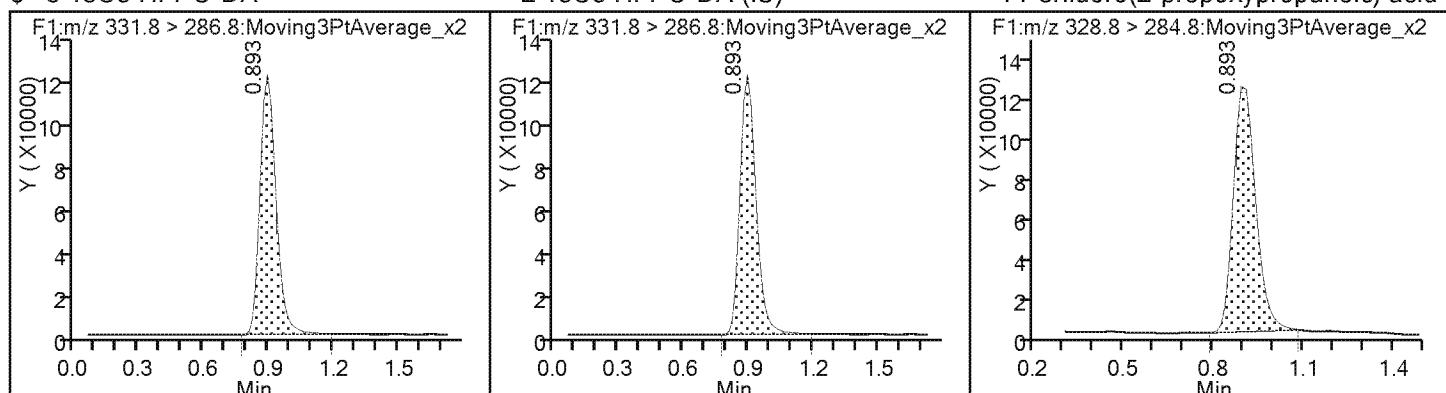
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21007.d
 Lims ID: LCSD 280-405473/4-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 21-Feb-2018 07:52:21 ALS Bottle#: 15 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: LCSD280-405473/4-A
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:36 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:41:24

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	7.90	78.99

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: LLCS 280-405473/3-A

Matrix: Water Lab File ID: hfpo718B21006.d

Analysis Method: 8321A Date Collected: _____

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 250 (mL) Date Analyzed: 02/21/2018 07:49

Con. Extract Vol.: 5 (mL) Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	0.0193		0.010	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	83		50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21006.d
 Lims ID: LLCS 280-405473/3-A
 Client ID:
 Sample Type: LLCS
 Inject. Date: 21-Feb-2018 07:49:06 ALS Bottle#: 14 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: LLCS280-405473/3-A
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:36 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:41:20

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.893 1.045 -0.152 1.000 617026 8.26 1496
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.893 1.045 -0.152 1.000 617026 10.0 1496
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.907 1.056 -0.149 1.000 65674 0.9666 18.4

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21006.d

Injection Date: 21-Feb-2018 07:49:06 Instrument ID: LC_LCMS7

Lims ID: LLCS 280-405473/3-A

Client ID:

Operator ID: JBH ALS Bottle#: 14 Worklist Smp#: 6

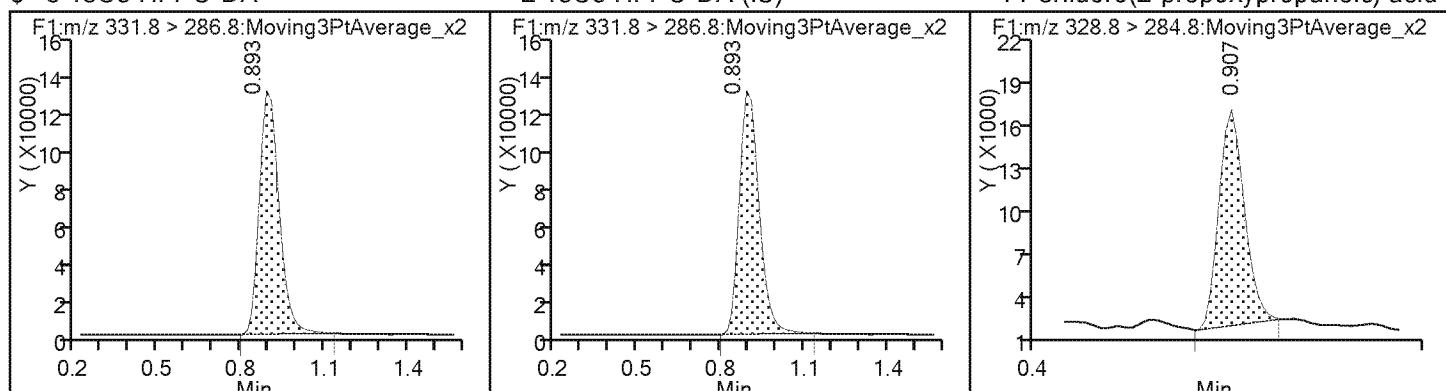
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21006.d
 Lims ID: LLCS 280-405473/3-A
 Client ID:
 Sample Type: LLCS
 Inject. Date: 21-Feb-2018 07:49:06 ALS Bottle#: 14 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: LLCS280-405473/3-A
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:36 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 09:41:20

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	8.26	82.64

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: DLCK 280-404345/13

Matrix: Water Lab File ID: hfpo718B08044.d

Analysis Method: 8321A Date Collected: _____

Extraction Method: _____ Date Extracted: _____

Sample wt/vol: 1 (mL) Date Analyzed: 02/08/2018 13:38

Con. Extract Vol.: _____ Dilution Factor: 1

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 404345 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	<0.50		0.50	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	104		50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08044.d
 Lims ID: DLCK
 Client ID:
 Sample Type: DLCK
 Inject. Date: 08-Feb-2018 13:38:01 ALS Bottle#: 2 Worklist Smp#: 13
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: DLCK
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:17 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:20:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA								
331.8 > 286.8	1.056	1.045	0.011	1.000	776147	10.4	1241	
* 2 13C3 HFPO-DA (IS)								
331.8 > 286.8	1.056	1.045	0.011		776147	10.0	1241	
1 Perfluoro(2-propoxypropanoic) acid							M	
328.8 > 284.8	1.056	1.056	0.0	1.000	21424	0.2255	2.8	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

HFPO_CAL-1_00032 Amount Added: 1.00 Units: mL

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfpo718B08044.d

Injection Date: 08-Feb-2018 13:38:01

Instrument ID: LC_LCMS7

Lims ID: DLCK

Client ID:

Operator ID: JBH

ALS Bottle#: 2 Worklist Smp#: 13

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

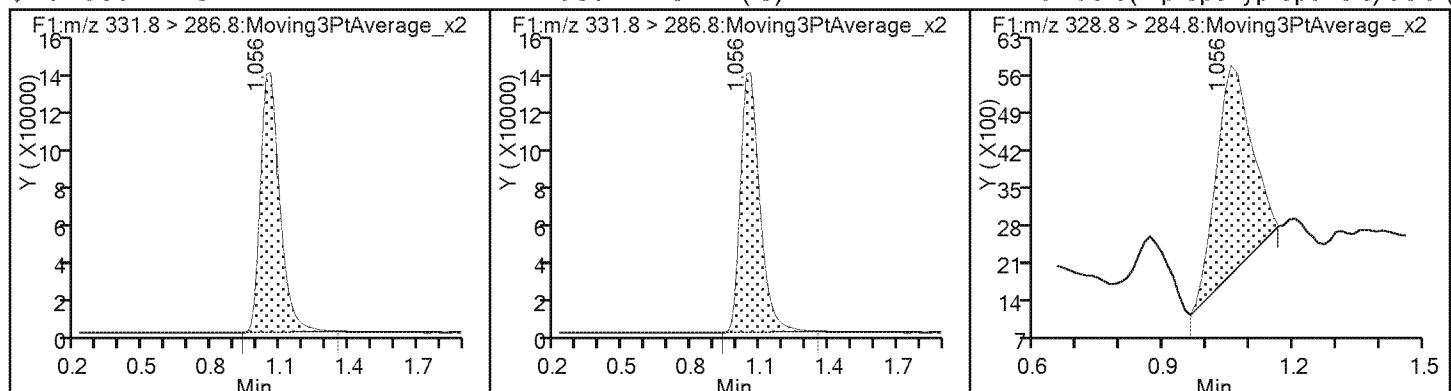
Method: HFPO

Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid (M)



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08044.d
 Lims ID: DLCK
 Client ID:
 Sample Type: DLCK
 Inject. Date: 08-Feb-2018 13:38:01 ALS Bottle#: 2 Worklist Smp#: 13
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: DLCK
 Misc. Info.: HFPO18B08
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 08-Feb-2018 15:24:17 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 08-Feb-2018 15:20:32

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	10.4	103.96

TestAmerica Denver

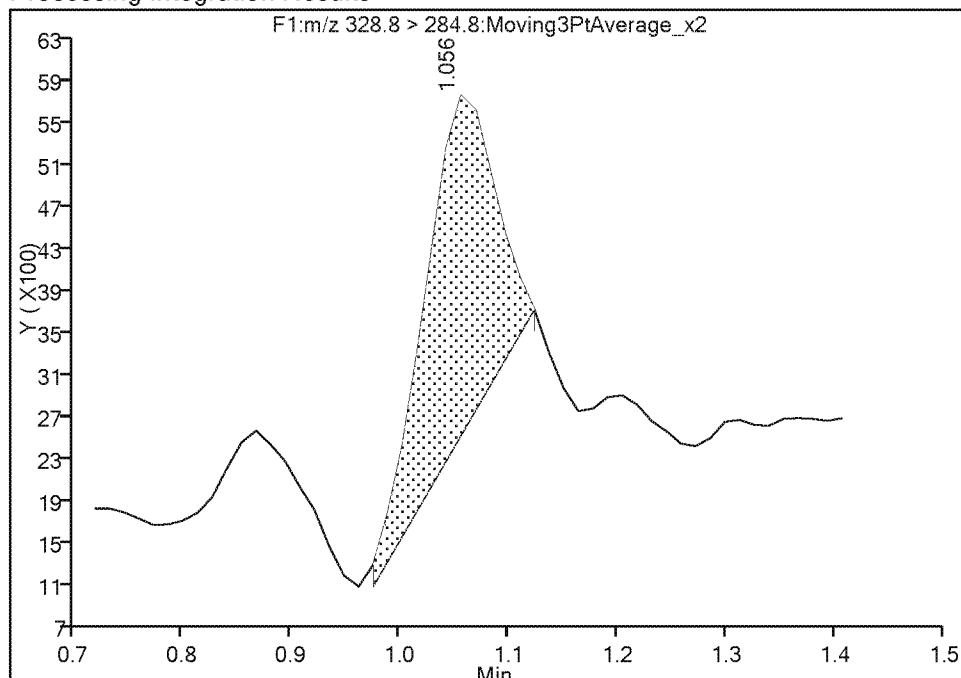
Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180208-67079.b\\hfpo718B08044.d
 Injection Date: 08-Feb-2018 13:38:01 Instrument ID: LC_LCMS7
 Lims ID: DLCK
 Client ID:
 Operator ID: JBH ALS Bottle#: 2 Worklist Smp#: 13
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Method: HFPO Limit Group: LC - 8321A_HFPO_Du
 Column: Detector F1:MRM

1 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

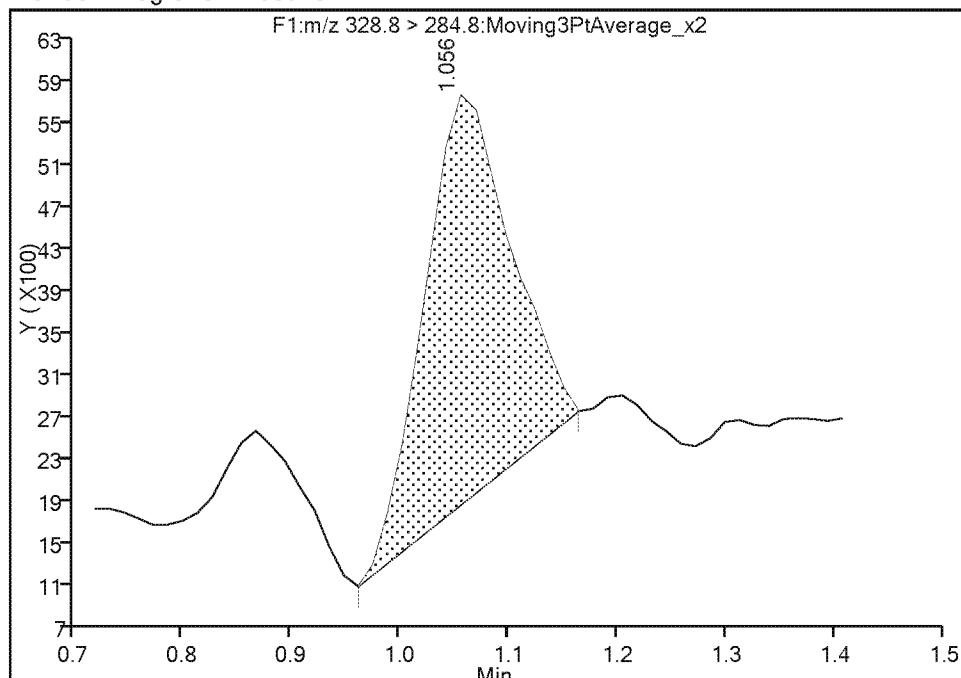
Processing Integration Results

RT: 1.06
 Area: 14614
 Amount: 0.143034
 Amount Units: ug/l



Manual Integration Results

RT: 1.06
 Area: 21424
 Amount: 0.225513
 Amount Units: ug/l



Reviewer: meyera, 08-Feb-2018 15:20:27

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDDOUTFALL-A MS Lab Sample ID: 280-106447-2 MS

Matrix: Water Lab File ID: hfpo718B21028.d

Analysis Method: 8321A Date Collected: 02/14/2018 12:00

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 278.2 (mL) Date Analyzed: 02/21/2018 09:00

Con. Extract Vol.: 5 (mL) Dilution Factor: 10

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	7.71		0.046	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	89	D	50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21028.d
 Lims ID: 280-106447-C-2-A MS
 Client ID: FAY-VES-OLDOUTFALL-A
 Sample Type: MS
 Inject. Date: 21-Feb-2018 09:00:48 ALS Bottle#: 34 Worklist Smp#: 28
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-C-2-AMS 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:05:56

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
--------	----	--------	--------	--------	----------	-------------	-----	-------

\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.934 1.045 -0.111 1.000 66147 0.8860 266
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.934 1.045 -0.111 1.000 66147 1.00 266
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.934 1.056 -0.122 1.000 3022182 42.9 192

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfp0718B21028.d

Injection Date: 21-Feb-2018 09:00:48 Instrument ID: LC_LCMS7

Lims ID: 280-106447-C-2-A MS

Client ID: FAY-VES-OLDDOUTFALL-A

Operator ID: JBH ALS Bottle#: 34 Worklist Smp#: 28

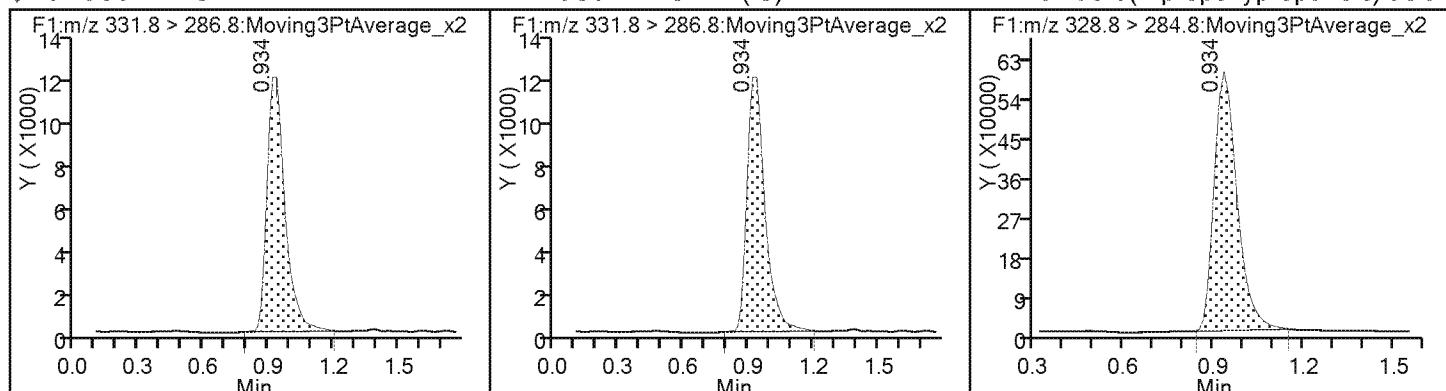
Injection Vol: 20.0 ul Dil. Factor: 10.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21028.d
 Lims ID: 280-106447-C-2-A MS
 Client ID: FAY-VES-OLDOUTFALL-A
 Sample Type: MS
 Inject. Date: 21-Feb-2018 09:00:48 ALS Bottle#: 34 Worklist Smp#: 28
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-C-2-AMS 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:05:56

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	0.8860	88.60

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-106447-1

SDG No.: _____

Client Sample ID: FAY-VES-OLDDOUTFALL-A DU Lab Sample ID: 280-106447-2 DU

Matrix: Water Lab File ID: hfpo718B21027.d

Analysis Method: 8321A Date Collected: 02/14/2018 12:00

Extraction Method: 3535 Date Extracted: 02/20/2018 10:22

Sample wt/vol: 280.9 (mL) Date Analyzed: 02/21/2018 08:57

Con. Extract Vol.: 5 (mL) Dilution Factor: 10

Injection Volume: 20 (uL) GC Column: Synergi Hydro ID: _____

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 405660 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	
13252-13-6	HFPO-DA	7.77		0.045	

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL02255	13C3 HFPO-DA	79	D	50-200

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21027.d
 Lims ID: 280-106447-B-2-A DU
 Client ID: FAY-VES-OLDOUTFALL-A
 Sample Type: DU
 Inject. Date: 21-Feb-2018 08:57:32 ALS Bottle#: 33 Worklist Smp#: 27
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-B-2-ADU 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:05:54

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ug/l	S/N	Flags
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\$ 3 13C3 HFPO-DA
 331.8 > 286.8 0.934 1.045 -0.111 1.000 58969 0.7898 236
 * 2 13C3 HFPO-DA (IS)
 331.8 > 286.8 0.934 1.045 -0.111 1.000 58969 1.00 236
 1 Perfluoro(2-propoxypropanoic) acid
 328.8 > 284.8 0.934 1.056 -0.122 1.000 2741880 43.7 174

TestAmerica Denver

Data File: \\ChromNA\\Denver\\ChromData\\LC_LCMS7\\20180221-67419.b\\hfpo718B21027.d

Injection Date: 21-Feb-2018 08:57:32 Instrument ID: LC_LCMS7

Lims ID: 280-106447-B-2-A DU

Client ID: FAY-VES-OLDDOUTFALL-A

Operator ID: JBH ALS Bottle#: 33 Worklist Smp#: 27

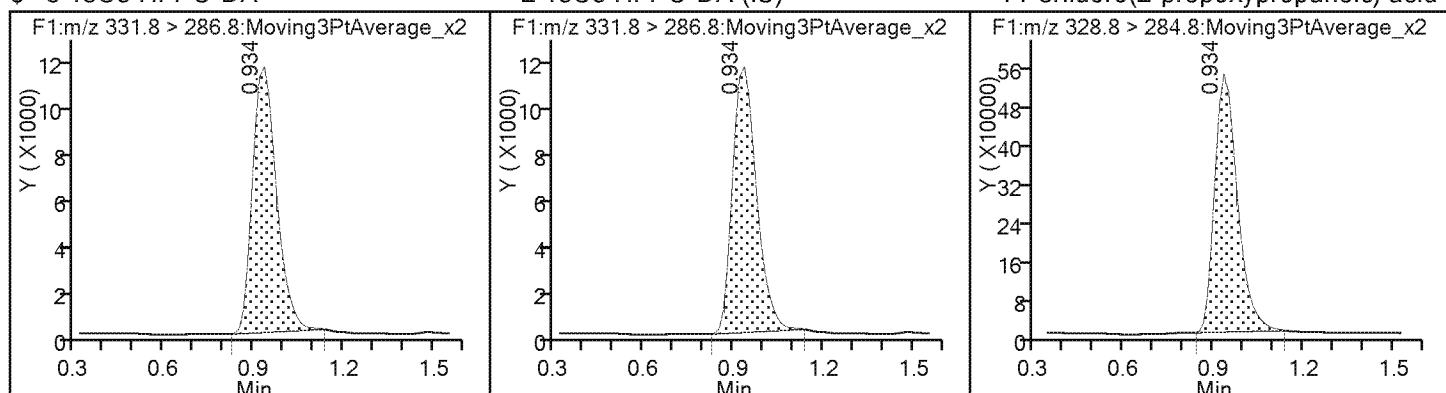
Injection Vol: 20.0 ul Dil. Factor: 10.0000

Method: HFPO Limit Group: LC - 8321A_HFPO_Du

\$ 3 13C3 HFPO-DA

* 2 13C3 HFPO-DA (IS)

1 Perfluoro(2-propoxypropanoic) acid



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\hfpo718B21027.d
 Lims ID: 280-106447-B-2-A DU
 Client ID: FAY-VES-OLDOUTFALL-A
 Sample Type: DU
 Inject. Date: 21-Feb-2018 08:57:32 ALS Bottle#: 33 Worklist Smp#: 27
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 280-106447-B-2-ADU 10x 100uL/1mL
 Misc. Info.: HFPO18B21
 Operator ID: JBH Instrument ID: LC_LCMS7
 Method: \\ChromNA\Denver\ChromData\LC_LCMS7\20180221-67419.b\HFPO.m
 Limit Group: LC - 8321A_HFPO_Du
 Last Update: 21-Feb-2018 10:06:47 Calib Date: 08-Feb-2018 13:31:32
 Integrator: Picker
 Quant Method: Internal/External Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Denver\ChromData\LC_LCMS7\20180208-67079.b\hfpo718B08042.d

Column 1 : Det: F1:MRM

Process Host: XAWRK015

First Level Reviewer: meyera Date: 21-Feb-2018 10:05:54

Compound	Amount Added	Amount Recovered	% Rec.
\$ 3 13C3 HFPO-DA	10.0	0.7898	78.98

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Instrument ID: LC_LCMS7

Start Date: 02/08/2018 13:05

Analysis Batch Number: 404345

End Date: 02/08/2018 13:41

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD001 280-404345/3 IC		02/08/2018 13:05	1	hfpo718B08034.d	Synergi Hydro
STD002 280-404345/4 IC		02/08/2018 13:08	1	hfpo718B08035.d	Synergi Hydro
STD003 280-404345/5 IC		02/08/2018 13:12	1	hfpo718B08036.d	Synergi Hydro
STD004 280-404345/6 IC		02/08/2018 13:15	1	hfpo718B08037.d	Synergi Hydro
STD005 280-404345/7 IC		02/08/2018 13:18	1	hfpo718B08038.d	Synergi Hydro
STD006 280-404345/8 IC		02/08/2018 13:21	1	hfpo718B08039.d	Synergi Hydro
STD007 280-404345/9 IC		02/08/2018 13:25	1	hfpo718B08040.d	Synergi Hydro
STD008 280-404345/10 IC		02/08/2018 13:28	1	hfpo718B08041.d	Synergi Hydro
STD009 280-404345/11 IC		02/08/2018 13:31	1	hfpo718B08042.d	Synergi Hydro
ICB 280-404345/12		02/08/2018 13:34	1	hfpo718B08043.d	Synergi Hydro
DLCK 280-404345/13		02/08/2018 13:38	1	hfpo718B08044.d	Synergi Hydro
ICV 280-404345/14		02/08/2018 13:41	1	hfpo718B08045.d	Synergi Hydro

8321A

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Instrument ID: LC_LCMS7

Start Date: 02/21/2018 07:39

Analysis Batch Number: 405660

End Date: 02/21/2018 09:33

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-405660/3		02/21/2018 07:39	1	hfpo718B21003.d	Synergi Hydro
MB 280-405473/1-A		02/21/2018 07:42	1	hfpo718B21004.d	Synergi Hydro
LCS 280-405473/2-A		02/21/2018 07:45	1	hfpo718B21005.d	Synergi Hydro
LLCS 280-405473/3-A		02/21/2018 07:49	1	hfpo718B21006.d	Synergi Hydro
LCSD 280-405473/4-A		02/21/2018 07:52	1	hfpo718B21007.d	Synergi Hydro
ZZZZZ		02/21/2018 07:55	1		Synergi Hydro
ZZZZZ		02/21/2018 07:58	1		Synergi Hydro
ZZZZZ		02/21/2018 08:02	1		Synergi Hydro
ZZZZZ		02/21/2018 08:05	1		Synergi Hydro
ZZZZZ		02/21/2018 08:08	1		Synergi Hydro
ZZZZZ		02/21/2018 08:11	1		Synergi Hydro
CCV 280-405660/14		02/21/2018 08:15	1	hfpo718B21014.d	Synergi Hydro
ZZZZZ		02/21/2018 08:18	1		Synergi Hydro
ZZZZZ		02/21/2018 08:21	1		Synergi Hydro
280-106447-7		02/21/2018 08:24	1	hfpo718B21017.d	Synergi Hydro
ZZZZZ		02/21/2018 08:28	1		Synergi Hydro
ZZZZZ		02/21/2018 08:31	1		Synergi Hydro
ZZZZZ		02/21/2018 08:34	1		Synergi Hydro
ZZZZZ		02/21/2018 08:37	1		Synergi Hydro
280-106447-12		02/21/2018 08:41	1	hfpo718B21022.d	Synergi Hydro
ZZZZZ		02/21/2018 08:44	1		Synergi Hydro
CCV 280-405660/24		02/21/2018 08:47	1	hfpo718B21024.d	Synergi Hydro
280-106447-1		02/21/2018 08:50	10	hfpo718B21025.d	Synergi Hydro
280-106447-2		02/21/2018 08:54	10	hfpo718B21026.d	Synergi Hydro
280-106447-2 DU		02/21/2018 08:57	10	hfpo718B21027.d	Synergi Hydro
280-106447-2 MS		02/21/2018 09:00	10	hfpo718B21028.d	Synergi Hydro
280-106447-3		02/21/2018 09:04	10	hfpo718B21029.d	Synergi Hydro
280-106447-4		02/21/2018 09:07	10	hfpo718B21030.d	Synergi Hydro
280-106447-5		02/21/2018 09:10	10	hfpo718B21031.d	Synergi Hydro
280-106447-6		02/21/2018 09:13	10	hfpo718B21032.d	Synergi Hydro
280-106447-8		02/21/2018 09:17	2	hfpo718B21033.d	Synergi Hydro
280-106447-9		02/21/2018 09:20	2	hfpo718B21034.d	Synergi Hydro
CCV 280-405660/35		02/21/2018 09:23	1	hfpo718B21035.d	Synergi Hydro
280-106447-10		02/21/2018 09:26	2	hfpo718B21036.d	Synergi Hydro
280-106447-11		02/21/2018 09:30	2	hfpo718B21037.d	Synergi Hydro
CCV 280-405660/38		02/21/2018 09:33	1	hfpo718B21038.d	Synergi Hydro

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Batch Number: 405473

Batch Start Date: 02/20/18 10:22

Batch Analyst: Bourgery, David F

Batch Method: 3535

Batch End Date: 02/20/18 14:44

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	HFPO I.S. 00008	HFPO Spike 00004
MB 280-405473/1		3535, 8321A				250 mL	5 mL	0.1 mL	
LCS 280-405473/2		3535, 8321A				250 mL	5 mL	0.1 mL	0.1 mL
LLCS 280-405473/3		3535, 8321A				250 mL	5 mL	0.1 mL	0.01 mL
LCSD 280-405473/4		3535, 8321A				250 mL	5 mL	0.1 mL	0.1 mL
280-106447-A-1	FAY-VES-OLDDOUTFA LL-A-D	3535, 8321A	T	318.9 g	30.0 g	288.9 mL	5 mL	0.1 mL	
280-106447-A-2	FAY-VES-OLDDOUTFA LL-A	3535, 8321A	T	325.8 g	30.0 g	295.8 mL	5 mL	0.1 mL	
280-106447-B-2	FAY-VES-OLDDOUTFA LL-A DU	3535, 8321A	T	309.3 g	28.4 g	280.9 mL	5 mL	0.1 mL	
280-106447-C-2	FAY-VES-OLDDOUTFA LL-A MS	3535, 8321A	T	308.7 g	30.5 g	278.2 mL	5 mL	0.1 mL	0.1 mL
280-106447-A-3	FAY-VES-OLDDOUTFA LL-B	3535, 8321A	T	322.8 g	30.2 g	292.6 mL	5 mL	0.1 mL	
280-106447-B-4	FAY-VES-OLDDOUTFA LL-C	3535, 8321A	T	300.8 g	29.9 g	270.9 mL	5 mL	0.1 mL	
280-106447-B-5	FAY-VES-OLDDOUTFA LL-D	3535, 8321A	T	313.4 g	29.9 g	283.5 mL	5 mL	0.1 mL	
280-106447-B-6	FAY-VES-OLDDOUTFA LL-E	3535, 8321A	T	309.6 g	28.6 g	281 mL	5 mL	0.1 mL	
280-106447-B-7	FAY-VES-OLDDOUTFA LLSEEP-A	3535, 8321A	T	315.7 g	28.3 g	287.4 mL	5 mL	0.1 mL	
280-106447-B-8	FAY-VES-OLDDOUTFA LLCREEK-A	3535, 8321A	T	324.8 g	31.2 g	293.6 mL	5 mL	0.1 mL	
280-106447-A-9	FAY-VES-OLDDOUTFA LLCREEK-A2	3535, 8321A	T	320.7 g	30.7 g	290 mL	5 mL	0.1 mL	
280-106447-B-10	FAY-VES-OLDDOUTFA LLCREEK-A3	3535, 8321A	T	324.3 g	29.4 g	294.9 mL	5 mL	0.1 mL	
280-106447-B-11	FAY-VES-OLDDOUTFA LLCREEKWATERBO	3535, 8321A	T	324.7 g	30.6 g	294.1 mL	5 mL	0.1 mL	
280-106447-A-12	FAY-VES-FB-02141 8	3535, 8321A	T	323.5 g	30.0 g	293.5 mL	5 mL	0.1 mL	

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
MB 280-405473/1		3535, 8321A							
LCS 280-405473/2		3535, 8321A							

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Batch Number: 405473

Batch Start Date: 02/20/18 10:22

Batch Analyst: Bourgery, David F

Batch Method: 3535

Batch End Date: 02/20/18 14:44

Lab Sample ID	Client Sample ID	Method Chain	Basis	Analysis Comment						
LLCS 280-405473/3		3535, 8321A								
LCSD 280-405473/4		3535, 8321A								
280-106447-A-1	FAY-VES-OLDDOUTFA LL-A-D	3535, 8321A	T							
280-106447-A-2	FAY-VES-OLDDOUTFA LL-A	3535, 8321A	T							
280-106447-B-2 DU	FAY-VES-OLDDOUTFA LL-A	3535, 8321A	T							
280-106447-C-2 MS	FAY-VES-OLDDOUTFA LL-A	3535, 8321A	T							
280-106447-A-3	FAY-VES-OLDDOUTFA LL-B	3535, 8321A	T							
280-106447-B-4	FAY-VES-OLDDOUTFA LL-C	3535, 8321A	T							
280-106447-B-5	FAY-VES-OLDDOUTFA LL-D	3535, 8321A	T							
280-106447-B-6	FAY-VES-OLDDOUTFA LL-E	3535, 8321A	T							
280-106447-B-7	FAY-VES-OLDDOUTFA LLSEEP-A	3535, 8321A	T	decanted						
280-106447-B-8	FAY-VES-OLDDOUTFA LLCREEK-A	3535, 8321A	T							
280-106447-A-9	FAY-VES-OLDDOUTFA LLCREEK-A2	3535, 8321A	T							
280-106447-B-10	FAY-VES-OLDDOUTFA LLCREEK-A3	3535, 8321A	T							
280-106447-B-11	FAY-VES-OLDDOUTFA LLCREEKWATERBO	3535, 8321A	T							
280-106447-A-12	FAY-VES-FB-02141 8	3535, 8321A	T							

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Denver

Job No.: 280-106447-1

SDG No.:

Batch Number: 405473

Batch Start Date: 02/20/18 10:22

Batch Analyst: Bourgery, David F

Batch Method: 3535

Batch End Date: 02/20/18 14:44

Batch Notes	
Acid ID	2% Formic Aci_00142
Acid Name	2% Formic Acid
Balance ID	24350888
Batch Comment	Reviewer:KI
First End time	02/20/18 1300
H2O ID	HPLC_Water_00857
Pipette ID	m2, SPE-1+ syringe
Reagent ID	10% NH4OH
Reagent Lot Number	10% NH4OH_00119
Solvent Lot #	Methanol_00192
Solvent Name	Methanol
SOP Number	DV-OP-0019
SPE Cartridge Type	STRATA-X-AW (8B S038 FCH)
Solid Phase Extraction Disk ID	S308-0079
First Start time	02/20/18 1044

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.



Reagent ID: HFPO_CAL-5_00081

Description:	level5	Expiration Date:	02/22/2018
No. of Bottles:	1	Laboratory:	TestAmerica Denver
Storage Location:	LCMS	Prepared By:	Meyer, Andrew GC
Reagent Volume:	1.000 mL	Solvent:	80:20 Methanol : H2O
Creation Date:	02/20/2018	Solvent Lot:	00016
Open Date:			
Container(s):	4970383		
Comment:	level-5		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
13C3 HFPO-DA	HFPO LS_00008	02/20/2018	0.60000	ug/mL	10.00000	ug/L
13C3 HFPO-DA (S)	HFPO LS_00008	02/20/2018	0.60000	ug/mL	10.00000	ug/L
Perfluoro(2-propoxypropanoic acid	HFPO Spike_00004	10/30/2018	0.60000	ug/mL	6.00000	ug/L

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
HFPO LS_00008	Internal Standard for HFPO 0.6ug/ml		02/20/18				20.00000	uL
HFPO Spike_00004	HFPO LCS Calibration Spike 0.6ug/ml		10/30/18				10.00000	uL

John Meyer
2/22/18

**Reagent ID:** **HFPO_CAL-6_00081**

Description:	level6	Expiration Date:	02/22/2018
No. of Bottles:	1	Laboratory:	TestAmerica Denver
Storage Location:	LCMS	Prepared By:	Meyer, Andrew GC
Reagent Volume:	1.000 mL	Solvent:	80:20 Methanol : H ₂ O
Creation Date:	02/20/2018	Solvent Lot:	00018
Open Date:			
Container(s):	4870384		
Comment:	level-6		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
13C3 HFPO-DA	HFPO I.S._00009	02/20/2019	0.50000	ug/ml	10.00000	ug/L
13C3 HFPO-DA (S)	HFPO I.S._00009	02/20/2019	0.50000	ug/ml	10.00000	ug/L
Perfluoro(2-propoxypropanoic) acid	HFPO Spike_00004	10/30/2018	0.50000	ug/ml	10.00000	ug/L

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
HFPO I.S._00009	Internal Standard for HFPO 0.5ug/ml		02/20/19				20.00000	uL
HFPO Spike_00004	HFPO LC/Calibration Spike 0.5ug/ml		10/30/18				20.00000	uL

Chloroform
2/20/18

Shipping and Receiving Documents

Arvada, CO 80002
(303) 736-0100

Regulatory Program: DW MPOES NORA Other:

TestAmerica Laboratories, Inc.

Client Contact		Project Manager: Robert Liddle			Site Contact: Christel Compton		Date: 2-14-18		COC No: PAR-022018-1		
Chemours 22828 NC HWY 87 W Fayetteville, NC 28306 910-678-1213 (xxx) xxx-xxxx FAX Project Name: Chemours Fayetteville OLD OUT FALL Site: Chemours Fayetteville Works Plant P O #		713-542-9503			Lab Contact:		Carrier: FedEx		1 of 2 COCs		
		Analysis Turnaround Time							Sampler:		
		<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS							For Lab Use Only:		
		TAT if different from above ASAP							Walk-in Client:		
		<input type="checkbox"/> 2 weeks							Lab Sampling:		
		<input type="checkbox"/> 1 week									
		<input checked="" type="checkbox"/> 2 days							Job / SDG No.:		
		<input type="checkbox"/> 1 day									
		Sample Identification	Sample Date	Sample Time	Sample Type (S=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Platform MS/MSD (Y/N)	HPLC-DA	Sample Specific Notes:
Page 202 of 204	FAY-VES-OLDDOUTFALL-A-REP	2/14/2018	1200	G	W	2	N	NX			
	FAY-VES-OLDDOUTFALL-A-0	2/14/2018	1200	G	W	2	N	NX			
	FAY-VES-OLDDOUTFALL-A-MS	2/14/2018	1200	G	W	2	N	NX			
	FAY-VES-OLDDOUTFALL-A	2/14/2018	1200	G	W	2	N	NX			
	FAY-VES-OLDDOUTFALL-B	2/14/2018	1245	G	W	2	N	NX			
	FAY-VES-OLDDOUTFALL-C	2/14/2018	1338	G	W	2	N	NX			
	FAY-VES-OLDDOUTFALL-D	2/14/2018	1405	G	W	2	N	NX			
	FAY-VES-OLDDOUTFALL-E	2/14/2018	1415	G	W	2	N	NX			
	FAY-VES-OLDDOUTFALLSEEP.A	2/14/2018	1310	G	W	2	N	NX			
	FAY-VES-OLDDOUTFALLCREEK-A	2/14/2018	1322	G	W	2	N	NX			
	FAY-VES-OLDDOUTFALLCREEK-A2	2/14/2018	1630	G	W	2	N	NX			
	FAY-VES-OLDDOUTFALLCREEK-A3	2/14/2018	1645	G	W	2	N	NX			
Preservation Used: 1=Ice, 2=HCl, 3=H ₂ SO ₄ , 4=HNO ₃ , 5=NaOH, 6=Other											
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.											Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Normalable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison II <input type="checkbox"/> Unknown					<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposed by Lab <input type="checkbox"/> Archive for _____ Months						
Special Instructions/QC Requirements & Comments:											
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:			Cooler Temp. (°C): Obs'd:		Com'd:		Therm ID No.:		
Relinquished by:		Company: PARSONS			Date/Time: 02-14-18 -1900		Received by:		Company: TA-Per		Date/Time: 2-15-18 0930
Relinquished by:		Company:			Date/Time:		Received by:		Company:		Date/Time:
Relinquished by:		Company:			Date/Time:		Received in Laboratory by:		Company:		Date/Time:

TestAmerica Denver
4955 Yarrow Street

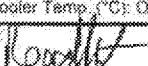
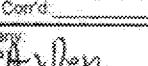
Arvada, CO 80002
(303) 735-0100

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: DW DRDG CIRRA Other:

Client Contact		Project Manager: Robert Liddle 713-542-6503			Site Contact: Christal Compton		Date: 2-14-18		COC No: PAR-022018-2
Chemours 22828 NC HWY 87 W Fayetteville, NC 28306 910-678-1213 (302) 200-2XXX FAX Project Name: Chemours Fayetteville OLD OUT FALL Site: Chemours Fayetteville Works Plant P.O. #		Analysis Turnaround Time			Lab Contact:		Carrier FedEx		2 of 2 COCs
		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS							Sampler:
		TAT if different from above: ASAP							For Lab Use Only:
		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input checked="" type="checkbox"/> 2 days <input type="checkbox"/> 1 day							Walk-in Client: <input type="checkbox"/>
									Lab Sampling: <input type="checkbox"/>
									Job / SDG No.: _____
									Sample Specific Notes:
Sample Identification		Sample Date	Sample Time	Sample Type (e.g. Comp., Ground)	Matrix	# of Cont.	Method (e.g. GC/MS, ICP/MS, XRF, etc.)		
FAY-VES-OLDCOUTFALLCREEKWATERBO		2/14/2018	1700	G	W	2	N	N	X
FAY-VES-FB-021418		2/14/2018	700	G	W	2	N	N	X
Preservation Used: 1= Ics; 2= HCl; 3= H ₂ SO ₄ ; 4= HNO ₃ ; 5= NaOH; 6= Other									
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for: _____ Months				
Special Instructions/QC Requirements & Comments:									
Custody Seals intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Colder Temp. (°C): Obs'd: _____		Colder: _____		Therm ID No.: _____	
Relinquished by: 		Company: PARSONS		Date/Time: 02-14-18 - 1800	Received by: 	Company: 	Date/Time: 2-14-18 0930		
Relinquished by: _____		Company: _____		Date/Time: _____	Received by: _____	Company: _____	Date/Time: _____		
Relinquished by: _____		Company: _____		Date/Time: _____	Received in Laboratory by: _____	Company: _____	Date/Time: _____		

Form No. CA-C-WH-802, Rev. 4.3, dated 12/06/2013

Login Sample Receipt Checklist

Client: Chemours Company FC, LLC The

Job Number: 280-106447-1

Login Number: 106447

List Source: TestAmerica Denver

List Number: 1

Creator: Pottruff, Reed W

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	